

MOST

Media Oriented Systems Transport

Multimedia and Control
Networking Technology

MOST FBlock NetBlock

Rev 3.1.0

01/2017

MOSTCO CONFIDENTIAL

See page 3 for the terms of disclosure



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Bibliography

All documents, which this MOST document has references to, are listed here with the actual revision this document is referring to.

| Number | Document | Revision |
|--------|--------------------|----------|
| [1] | MOST Specification | 3.1 |

Document History

Changes FBlock NetBlock 3.0.3 to FBlock NetBlock 3.1.0

| Change Ref. | FktID | Changes |
|-------------|---------|--|
| 3.1.0-001 | General | – Modified FBlock description so that it refers to nodes. (WGDA D123_4_1) |
| 3.1.0-002 | 0x000 | FBlockIDs: – Modified description of so that it refers to a node. (WGDA D123_4_1) – Excluded 0xFF from FBlockID value range. – Excluded 0x00 and 0xFF from InstID value range. |
| 3.1.0-003 | 0x002 | – Deleted function NodePositionAddress. (WGDA D119_7). |
| 3.1.0-004 | 0x003 | – Deleted function NodeAddress. (WGDA D119_7). |
| 3.1.0-005 | 0x004 | GroupAddress: – Modified description of so that it refers to a node. (WGDA D123_4_1) – Limited value range to 0x0300...0x03C7 and 0x03C9...0x03FE. |
| 3.1.0-006 | 0x006 | Shutdown: – Renamed ShutDown to Shutdown. (WGDA D120_9). – Split Control parameter into distinct parameters for commands and reports. (Draft preparation) |
| 3.1.0-007 | 0x007 | – Deleted function RetryParameters. (WGDA D123_9). |
| 3.1.0-008 | 0x008 | – Deleted function SamplingFrequency. (WGDA D123_9). |
| 3.1.0-009 | 0x009 | ShutdownReason: – Renamed ShutDownReason to ShutdownReason. (WGDA D107_4). – Reduced ShutDownReason function description to avoid redundancies and conflicts. (WGDA D107_7). – Changed parameter DiagID from Stream to Word in ShutDownReason. (WGDA D123_9). – Changed occurrence from mandatory to optional. |
| 3.1.0-010 | 0x012 | ImplFBlockIDs: – Reduced function and parameter description to avoid redundancies and conflicts. (WGDA D107_7). – Excluded 0xFF from FBlockID value range. – Excluded 0x00 and 0xFF from InstID value range. |
| 3.1.0-011 | 0x405 | – RBDResult: Changed parameter DiagID from Stream to Unsigned Word. (WGDA D123_9). |
| 3.1.0-012 | 0xA03 | – Deleted function Boundary. (WGDA D119_7). |

Changes FBlock NetBlock 3.0.2 to FBlock NetBlock 3.0.3

| Change Ref. | FktID | Changes |
|-------------|---------|---|
| 3.0.3-001 | General | <ul style="list-style-type: none"> Removed reference to GeneralFBlock Template because no functions from the GeneralFBlock are required anymore. Removed reference to GeneralFBlock.Version and GeneralFBlock.FBlockInfo. (WGDA D116_5) |
| 3.0.3-002 | 0x001 | DeviceInfo: Removed function. (WGDA D113_5_1) |
| 3.0.3-003 | 0x003 | NodeAddress: Removed OPType SetGet. (WGDA D97_2, D113_9) |
| 3.0.3-004 | 0x004 | GroupAddress: Removed OPTypes Set and SetGet. (WGDA D113_9) |
| 3.0.3-005 | 0x007 | <ul style="list-style-type: none"> RetryParameters: Removed OPTypes Set and SetGet. (WGDA D113_9) RetryParameters: Introduced upper range limit for RetryTime and RetryNumbers. |
| 3.0.3-006 | 0x012 | ImplFBlockIDs: Modified description of parameter ImplFBlockIDs. (WGDA D110_4) |
| 3.0.3-007 | 0x014 | MOSTVersionInfo: New function. (WGDA D101_25_2, D116_5) |
| 3.0.3-008 | 0x401 | Notification: Removed function. (WGDA D113_9) |
| 3.0.3-009 | 0x402 | NotificationCheck: Removed function. (WGDA D113_9) |

Changes FBlock NetBlock 3.0.1 to FBlock NetBlock 3.0.2

| Change Ref. | FktID | Changes |
|-------------|---------|---|
| 3.0.2-001 | General | <ul style="list-style-type: none"> Corrected invalid exponent and step values. Filled the SymbolicName attribute for all Enums. |
| 3.0.2-002 | 0x007 | RetryParameters: <ul style="list-style-type: none"> Modified description of parameter RetryTime. |
| 3.0.2-003 | 0x401 | Notification: <ul style="list-style-type: none"> Removed blank after ClearAll Enum value of parameter Control. |

Changes FBlock NetBlock 3.0.0 to FBlock NetBlock 3.0.1

| Change Ref. | FktID | Changes |
|-------------|---------|---|
| 3.0.1-001 | General | Removed obsolete FunctionSection attributes. |
| 3.0.1-002 | 0x001 | DeviceInfo: <ul style="list-style-type: none"> Changed CapabilityToWake to "Reserved". Extended range of parameter ID to 0xBA. |
| 3.0.1-003 | 0x005 | PermissionToWake: Deleted function PermissionToWake. |
| 3.0.1-004 | 0x006 | ShutDown: <ul style="list-style-type: none"> Removed all OPTypes that were using the SenderHandle parameter. Corrected inconsistent function class reference. |
| 3.0.1-005 | 0x007 | RetryParameters: Changed description; RetryNumbers is the number of transmission attempts. |
| 3.0.1-006 | 0x111 | Boundary: Distinguished between MOST50 and MOST150 ranges for Boundary. |

Changes FBlock NetBlock 2.5.1 - Speed Grade MOST50 to FBlock NetBlock 3.0.0

| Change Ref. | FktID | Changes |
|-------------|---------|--|
| 3.0.0-001 | General | <ul style="list-style-type: none"> – Corrected ParamPos from 1 to 0 for parameterless OPTypes. – Modified boundary descriptor range--now 0..93. – Unified descriptions of identical parameters and corrected clerical errors. – Added Occurrence attribute to all functions. |
| 3.0.0-002 | 0x006 | <ul style="list-style-type: none"> – Changed function class for function ShutDown from Unclassified Method to Sequence Method. – Added OPTypes StartAck, ResultAck, and ErrorAck to function ShutDown. |
| 3.0.0-003 | 0x007 | <ul style="list-style-type: none"> – Changed function class for function RetryParameters from Unclassified Property to Sequence Property. |
| 3.0.0-004 | 0x008 | <ul style="list-style-type: none"> – Removed blank from function name of "Sampling Frequency". |
| 3.0.0-005 | 0x009 | <ul style="list-style-type: none"> – Added function ShutDownReason. |
| 3.0.0-006 | 0x012 | <ul style="list-style-type: none"> – Added function ImplFBlockIDs. |
| 3.0.0-007 | 0x013 | <ul style="list-style-type: none"> – Added function EUI48. |
| 3.0.0-008 | 0x401 | <ul style="list-style-type: none"> – Removed remarkt that Notification messages must not be segmented. This is already described in more detail in the MOST Specification. – Notification marked as deprecated. |
| 3.0.0-009 | 0x402 | <ul style="list-style-type: none"> – NotificationCheck marked as deprecated. |
| 3.0.0-010 | 0x405 | <ul style="list-style-type: none"> – Added function RBDResult. |

Changes FBlock NetBlock 2.5.1 - Speed Grade MOST25 to FBlock NetBlock 2.5.1 - Speed Grade MOST50

| Change Ref. | FktID | Changes |
|-------------|-------|--|
| 2.5.1-001 | - | - Created NetBlock for speed grade MOST50, based on NetBlock 2.5.1 (speed grade MOST25). |
| 2.5.1-002 | 0x100 | - Removed function SourceHandles. |
| 2.5.1-003 | 0xA03 | - Modified range of Boundary Descriptor - previously 6-15, now 0-29. |

1 Introduction

This document contains the specification of an FBlock. MOST FBlocks are standardized and maintained by MOST workgroup Device Architecture (WG_DA). In order to speed up the process of making new FBlocks available, every FBlock will be updated individually as required.

2 Function Catalog

2.1 NetBlock (FBlockID = 0x01)

The NetBlock provides functions that affect a whole MOST node or remote controlled node.

| Function Overview | | |
|-------------------|---------------------------------|-------------|
| FktID | Name | Occurrence |
| 0x000 | FBlockIDs | Mandatory |
| 0x004 | GroupAddress | Mandatory |
| 0x006 | Shutdown | Mandatory |
| 0x009 | ShutdownReason | Optional |
| 0x012 | ImplFBlockIDs | Optional |
| 0x013 | EUI48 | Conditional |
| 0x014 | MOSTVersionInfo | Mandatory |
| 0x405 | RBDResult | Mandatory |

2.1.1 FBlockIDs (0x000)

Occurrence: Mandatory

Property for querying the FBlocks that are implemented in a node and for setting the InstID.

2.1.1.1 Format of Function

Function class: Unclassified Property

| FBlock | Function | OPType | Parameter |
|-----------------|-------------------|--------|--|
| NetBlock (0x01) | FBlockIDs (0x000) | Get | |
| | | SetGet | FBlockID , OldInstID , NewInstID |
| | | Status | FBlockIDList |
| | | Error | ErrorCode, ErrorInfo |

2.1.1.2 Parameter

FBlockID

Functional address of an FBlock.

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Byte | none | 0 | 1 | 0 . . . 254 | |

OldInstID

Old InstID of the FBlock that is identified by FBlockID.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

NewInstID

New InstID for the FBlock that is identified by FBlockID.

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Byte | none | 0 | 1 | 1 . . . 254 | |

FBlockIDList

List of FBlockID/InstID pairs for the FBlocks that are implemented in the node.

| Basis data type | Length | Description |
|-----------------|--------|---|
| Stream | | Content: FBlockID , InstID [repeated] |

FBlockIDList.FBlockID

Functional address of an FBlock.

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Byte | none | 0 | 1 | 0 . . . 254 | |

FBlockIDList.InstID

Distinction of identical FBlocks in a system.

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Byte | none | 0 | 1 | 1 . . . 254 | |

2.1.2 GroupAddress (0x004)

Occurrence: Mandatory

With this property, the group address of the node can be queried.

2.1.2.1 Format of Function

Function class: Number

| FBlock | Function | OPType | Parameter |
|-----------------|----------------------|--------|------------------------------|
| NetBlock (0x01) | GroupAddress (0x004) | Get | |
| | | Status | GroupAddress |
| | | Error | ErrorCode, ErrorInfo |

2.1.2.2 Parameter

GroupAddress

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Word | none | 0 | 1 | 768 . . . 967 | 0x0300...0x03C7 |
| | | | | 969 . . . 1022 | 0x03C9...0x03FE |

2.1.3 Shutdown (0x006)

Occurrence: Mandatory

In normal operation mode, only the PowerMaster switches off the network.

2.1.3.1 Format of Function

Function class: Sequence Method

| FBlock | Function | OPType | Parameter |
|-----------------|------------------|--------|--------------------------------|
| NetBlock (0x01) | Shutdown (0x006) | Start | ControlCommand |
| | | Result | ControlResult |
| | | Error | ErrorCode, ErrorInfo |

2.1.3.2 Parameter

ControlCommand

Enumeration of available values for Control commands.

| Basis data type | Code | Name | Description |
|------------------|------|------------------------|---------------------------|
| Enum (1 byte) | 0x0 | Query | Query |
| | 0x2 | Execute | Execute |
| | 0x4 | DeviceShutdown | Device Shutdown |
| | 0x5 | WakeFromDeviceShutdown | Wake from Device Shutdown |

ControlResult

Enumeration of available values for Control reports.

| Basis data type | Code | Name | Description |
|------------------|------|-------------|----------------------|
| Enum (1 byte) | 0x1 | Suspend | Suspend |
| | 0x3 | Temperature | Temperature Shutdown |

2.1.4 ShutdownReason (0x009)

Occurrence: Optional

This function is used by a unique controller to query all nodes for stored faults.

2.1.4.1 Format of Function

Function class: Unclassified Property

| FBlock | Function | OPType | Parameter |
|-----------------|------------------------|--------|--|
| NetBlock (0x01) | ShutdownReason (0x009) | Set | SSOCUStatus |
| | | Get | |
| | | Status | SSOCUStatus , DiagID |
| | | Error | ErrorCode, ErrorInfo |

2.1.4.2 Parameter

SSOCUStatus

Only 0x00 is allowed on OPType Set.

| Basis data type | Code | Name | Description |
|------------------|------|-------------------|---------------------|
| Enum (1 byte) | 0x0 | NoResultAvailable | No result available |
| | 0x1 | NoFaultSaved | No fault saved |
| | 0x2 | SuddenSignalOff | Sudden Signal Off |
| | 0x3 | CriticalUnlock | Critical Unlock |

DiagID

The diagnostic identifier of the device. The content is defined by the system integrator.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Word | none | 0 | 1 |

2.1.5 ImplFBlockIDs (0x012)

Occurrence: Optional

This function provides a static list of all implemented FBlocks.

2.1.5.1 Format of Function

Function class: Unclassified Property

| FBlock | Function | OPType | Parameter |
|-----------------|-----------------------|--------|-------------------------------|
| NetBlock (0x01) | ImplFBlockIDs (0x012) | Get | |
| | | Status | ImplFBlockIDs |
| | | Error | ErrorCode, ErrorInfo |

2.1.5.2 Parameter

ImplFBlockIDs

List of FBlockID/InstID combinations that are implemented in this FBlock.

| Basis data type | Length | Description |
|-----------------|--------|--|
| Stream | | Content: { FBlockID , InstID }[repeated] |

ImplFBlockIDs.FBlockID

Functional address of an FBlock.

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Byte | none | 0 | 1 | 0 . . . 254 | |

ImplFBlockIDs.InstID

Instance ID of the FBlock.

| Basis data type | Unit | Exp. | Step | Range of values | Range description |
|-----------------|------|------|------|-----------------|-------------------|
| Unsigned Byte | none | 0 | 1 | 1 . . . 254 | |

2.1.6 EUI48 (0x013)

Occurrence: Conditional

The presence of this function is conditional; it is required if the device supports Ethernet over MOST. The IEEE defined 48-bit extended unique identifier (EUI-48) is a concatenation of a 24-bit Organizationally Unique Identifier (OUI) value administered by the IEEE Registration Authority and a 24-bit extension identifier assigned by the organization with that OUI assignment.

2.1.6.1 Format of Function

Function class: Sequence Property

| FBlock | Function | OPType | Parameter |
|-----------------|---------------|--------|---|
| NetBlock (0x01) | EUI48 (0x013) | Get | |
| | | Status | EUI0 , EUI1 , EUI2 , EUI3 , EUI4 , EUI5 |
| | | Error | ErrorCode, ErrorInfo |

2.1.6.2 Parameter

EUI0

The first byte of the OUI.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

EUI1

The second byte of the OUI.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

EUI2

The third byte of the OUI.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

EUI3

The first byte of the extension identifier.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

EUI4

The second byte of the extension identifier.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

EUI5

The third byte of the extension identifier.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Byte | none | 0 | 1 |

2.1.7 MOSTVersionInfo (0x014)

Occurrence: Mandatory

This function identifies the version of

- the underlying MOST Specification
- the NetBlock
- the MOST transceiver

2.1.7.1 Format of Function

Function class: Sequence Property

| FBlock | Function | OPType | Parameter |
|-----------------|-------------------------|--------|--|
| NetBlock (0x01) | MOSTVersionInfo (0x014) | Get | |
| | | Status | MOSTVersion , FBlockVersion , MOSTTransceiverVersion |
| | | Error | ErrorCode, ErrorInfo |

2.1.7.2 Parameter

MOSTVersion

The version of the underlying MOST Specification.

| Basis data type | MaxSize |
|-----------------|---------|
| String | |

FBlockVersion

The version of the NetBlock.

| Basis data type | MaxSize |
|-----------------|---------|
| String | |

MOSTTransceiverVersion

The version of the MOST transceiver.

| Basis data type | MaxSize |
|-----------------|---------|
| String | |

2.1.8 RBDResult (0x405)

Occurrence: Mandatory

The first device downstream the faulty network section (node in TimingMaster mode at the end of RBD phase 2) must transmit the result of the RBD test containing the status of the test and its diagnostic identifier via broadcast within RBD phase 3.

This information can be received by any device, where the information will be stored as the result of the RBD.

2.1.8.1 Format of Function

Function class: Unclassified Property

| FBlock | Function | OPType | Parameter |
|-----------------|-------------------|--------|--|
| NetBlock (0x01) | RBDResult (0x405) | Status | RBDStatus , DiagID |
| | | Error | ErrorCode, ErrorInfo |

2.1.8.2 Parameter

RBDStatus

Status of the RBD result.

| Basis data type | Code | Name | Description |
|------------------|------|-------------------|----------------------|
| Enum (1 byte) | 0x0 | ActivityAndLock | Activity and lock |
| | 0x1 | ActivityButNoLock | Activity but no lock |
| | 0x2 | NoActivity | No activity |

DiagID

The diagnostic identifier of the device. The content is defined by the system integrator.

| Basis data type | Unit | Exp. | Step |
|-----------------|------|------|------|
| Unsigned Word | none | 0 | 1 |