

MOST

Media Oriented Systems Transport

Multimedia and Control
Networking Technology

MOST FBlock Diagnosis

Rev 3.0.2

05/2012

MOSTCO CONFIDENTIAL

See page 3 for the terms of disclosure



Legal Notice

COPYRIGHT

© Copyright 1999 - 2012 MOST Cooperation. All rights reserved.

LICENSE DISCLAIMER

Nothing on any MOST Cooperation Web Site, or in any MOST Cooperation document, shall be construed as conferring any license under any of the MOST Cooperation or its members or any third party's intellectual property rights, whether by estoppel, implication, or otherwise.

CONTENT AND LIABILITY DISCLAIMER

MOST Cooperation or its members shall not be responsible for any errors or omissions contained at any MOST Cooperation Web Site, or in any MOST Cooperation document, and reserves the right to make changes without notice. Accordingly, all MOST Cooperation and third party information is provided "AS IS". In addition, MOST Cooperation or its members are not responsible for the content of any other Web Site linked to any MOST Cooperation Web Site. Links are provided as Internet navigation tools only.

MOST COOPERATION AND ITS MEMBERS DISCLAIM ALL WARRANTIES WITH REGARD TO THE INFORMATION (INCLUDING ANY SOFTWARE) PROVIDED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. Some jurisdictions do not allow the exclusion of implied warranties, so the above exclusion may not apply to you.

In no event shall MOST Cooperation or its members be liable for any damages whatsoever, and in particular MOST Cooperation or its members shall not be liable for special, indirect, consequential, or incidental damages, or damages for lost profits, loss of revenue, or loss of use, arising out of or related to any MOST Cooperation Web Site, any MOST Cooperation document, or the information contained in it, whether such damages arise in contract, negligence, tort, under statute, in equity, at law or otherwise.

FEEDBACK INFORMATION

Any information provided to MOST Cooperation in connection with any MOST Cooperation Web Site, or any MOST Cooperation document, shall be provided by the submitter and received by MOST Cooperation on a non-confidential basis. MOST Cooperation shall be free to use such information on an unrestricted basis.

TRADEMARKS

MOST Cooperation and its members prohibit the unauthorized use of any of their trademarks. MOST Cooperation specifically prohibits the use of the MOST Cooperation LOGO unless the use is approved by the Steering Committee of MOST Cooperation.

SUPPORT AND FURTHER INFORMATION

For more information on the MOST technology, please contact:

MOST Cooperation

Administration
Bannwaldallee 48
D-76185 Karlsruhe
Germany

Tel: (+49) (0) 721 966 50 00

E-mail: contact@mostcooperation.com

Web: www.mostcooperation.com



This Specification is Confidential Information of the MOST Cooperation. It may only be disclosed to member companies. Member companies wishing to discuss these Specifications with suppliers or other third parties must ensure that a commercially standard form of non-disclosure agreement has been previously executed by the party receiving such Specifications. Use of these Specifications may only be for purposes for which they are intended by the MOST Cooperation. Unauthorized use or disclosure is a violation of law.

© Copyright 1999 - 2012 MOST Cooperation
All rights reserved

MOST is a registered trademark

BIBLIOGRAPHY	5
DOCUMENT HISTORY	6
1 INTRODUCTION	8
2 FBLOCK DEFINITION	8
2.1 Diagnosis (FBlockID=0x06)	8
2.1.1 DiagMsg (0x200)	10
2.1.2 DiagID (0x201)	12
2.1.3 CodingErrors (0x20F)	13

Bibliography

All documents, which are referenced by this MOST document, are listed here along with their versions.

	Document	Revision
[1]	MOST Specification	3.0
[2]	GeneralFBlock FBlock Template Specification	3.0.3
[3]	Diagnostic Protocols Adaptation Specification	1.0

Document History

Changes Diagnosis FBlock 3.0.1 to Diagnosis FBlock 3.0.2

Change Ref.	FktID	Changes
3V02-001	Bibliography	Updated references.
3V02-002	0x200	DiagMsg: Modified description so that it no longer has to rely on implicit notification, which would require an entry in the Notification Matrix.
3V02-003	0x20F	CodingErrors: Changed function signature, removed Hysteresis parameter.

Changes Diagnosis FBlock 3.0 to Diagnosis FBlock 3.0.1

Change Ref.	FktID	Changes
3V01-001	Bibliography	Removed list of currently released FBlocks due to lack of relevance. Updated reference to GeneralFBlock to Rev. 3.0.1.
3V01-002	General	Minor editorial changes, for example, in headings.
3V01-003	section 2.1	Removed potentially misleading sentence in FBlock description that indicated that the InstID of the FBlock corresponds to the diagnosis address.

Changes Diagnosis FBlock 2.4 to Diagnosis FBlock 3.0

Change Ref.	FktID	Changes
3V0-001	Bibliography	Added document references to MOST Specification 3.0, GeneralFBlock 3.0, and Diagnostic Protocols Adaptation Specification 1.0.
3V0-002	General	Added note that FktIDs 0x050 and 0x051 are reserved.
3V0-003	-	Updated definitions part.
3V0-004	0x000	Removed function FktIDs. The function is now referenced from the GeneralFBlock template.
3V0-005	0x001	Removed function Notification. The function is now referenced from the GeneralFBlock template.
3V0-006	0x002	Removed function NotificationCheck. The function is now referenced from the GeneralFBlock template.
3V0-007	0x050	Removed function KeywordRec.
3V0-008	0x055	Removed function AsyncKeywordRec.
3V0-009	0x200	Added function DiagMsg.
3V0-010	0x201	Added function DiagID.
3V0-011	0x20F	Added function CodingErrors.
3V0-012	0x400	Removed function StartDiagnosticSession.
3V0-013	0x401	Removed function EndDiagnosticSession.
3V0-014	0x402	Removed function GetValue.
3V0-015	0x403	Removed function GetData.
3V0-016	0x404	Removed function DetachPortFromLocalControl.
3V0-017	0x405	Removed function DetachPortFromRemoteControl.
3V0-018	0x406	Removed function KeywordRec_ISO_TF2.
3V0-019	0x407	Removed function PutValue.
3V0-020	0x408	Removed function PutData.
3V0-021	0x409	Removed function StartLocalRoutine.
3V0-022	0x40A	Removed function ErrorBuffer.
3V0-023	0x40C	Removed function KeywordRec_TP2_0.

Change Ref.	FktID	Changes
3V0-024	0x410	Removed function ErrorBufferSize.
3V0-025	0x411	Removed function ResetErrorBuffer.
3V0-026	0x412	Removed function StopLocalRoutine.
3V0-027	0x413	Removed function RequestLocalRoutineResult.

Changes Diagnosis FBlock 2.3.1 to Diagnosis FBlock 2.4

Change Ref.	FktID	Changes
2.4-001	0x002	- Changed description of parameter FktIDList.
2.4-002	0x412	- New function added. StopLocalRoutine (0x412) is used by a diagnostic tool to stop a routine in a device initiated by StartLocalRoutine.
2.4-003	0x413	- New function added. RequestLocalRoutine (0x413) is used by a diagnostic tool to request results (e.g. exit status information) referenced by a RoutineID.

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 Function Blocks available, every FBlock will be updated individually as required.

2 FBlock Definition

2.1 Diagnosis (FBlockID=0x06)

The function block Diagnosis is implemented in every device capable of diagnosis.

In addition to the functions contained in this document, the following functions are also part of the Diagnosis FBlock. They exist in the GeneralFBlock template and are included here by reference.

For GeneralFBlock Rev. 3.0.3, the included functions are:

FktID	Function name
0x000	FktIDs
0x001	Notification
0x002	NotificationCheck
0x011	FBlockInfo

Note: In the Diagnosis FBlock, the function IDs 0x050 and 0x051 are reserved and must not be used.

Function Overview		
FktID	Name	Occurrence
0x200	DiagMsg	Optional
0x201	DiagID	Optional
0x20F	CodingErrors	Optional

2.1.1 DiagMsg (0x200)

Occurrence: Optional

This property is used for transferring diagnostic messages. The Set OPType is used for transferring a diagnostic request and the Status OPType is used for transferring a diagnostic response.

When the Controller sends OPType Set, the Slave may reply with one or more OPType Status messages. (This depends on the used diagnosis protocol and the actual content of the diagnosis message provided in OPType Set.)

A corresponding entry in the Notification Matrix is not required.

2.1.1.1 Format of Function

Function classes: Unclassified Property

FBlock	Function	OPType	Parameter
Diagnosis (0x06)	DiagMsg (0x200)	Set	DAPHeaderVersion , PayloadLength , TypeOfService , SystemIntegratorPart , SourceAddress , Payload
		Status	DAPHeaderVersion , PayloadLength , TypeOfService , SystemIntegratorPart , SourceAddress , Payload
		Error	ErrorCode, ErrorInfo

2.1.1.2 Parameter

DAPHeaderVersion

This field identifies the version of the DAP header:

Version 1: 0x01

Reserved for future use: 0x00; 0x02 - 0xFF

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

PayloadLength

Determines the length of the Payload parameter.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

TypeOfService

Beside the familiar applicative diagnostic services UDS and KWP2000, a system integrator can appoint the assignment of this PDU to another diagnostic or non-diagnostic application.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0xFF	0x00	SystemIntegratorSpecific	System Integrator specific
		0x01	UDS	UDS
		0x02	KWP2000	KWP2000
		0x03 ... 0xBF		Reserved for future use
		0xC0 ... 0xFF		System Integrator specific

SystemIntegratorPart

The data field "System Integrator Part" is set to 0xFFFF by default. However, the data field can be used by the system integrator, e.g., in order to work with sequence numbers if needed. Alternatively it can be used for a 32-bit source addressing scheme. The "System Integrator Part" field can contain the source address' higher 16 bits and the "Source Address" itself the lower 16 bits.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

SourceAddress

The data field "Source Address" can be used to identify the test tool that has sent a request. A server device has to copy the data of this field - that describes the applicative diagnostic address of the test tool according to section 4.1 - from a diagnostic request to the corresponding diagnostic response. The default value is 0xFFFF.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

Payload

The Payload data field of the DAP PDU.

Basis data type	Length	Description
Stream		

2.1.2 DiagID (0x201)

Occurrence: Optional

The content of the diagnostic identifier (DiagID) is defined by the System Integrator; its length has to be chosen so that the message can be sent as an unsegmented control message.

This function may support notification.

2.1.2.1 Format of Function

Function classes: Container

FBlock	Function	OPType	Parameter
Diagnosis (0x06)	DiagID (0x201)	Get	-
		Status	DiagID
		Error	ErrorCode, ErrorInfo

2.1.2.2 Parameter

DiagID

Diagnostic identifier of the device.

Basis data type	Length	Description
Stream		

2.1.3 CodingErrors (0x20F)

Occurrence: Optional

For detection of errors in the data recovery of the device, it has to count frames with coding errors. With this function it is possible to activate/deactivate the counter, to read the values and to reset the counter. By default the counter is deactivated (State = OFF). When the state is set to off, the counted value should stay valid. The counter is reset to zero after Get.

2.1.3.1 Format of Function

Function classes: Unclassified Property

FBlock	Function	OPType	Parameter
Diagnosis (0x06)	CodingErrors (0x20F)	Set	State , Reserved , Timeout
		Get	-
		Status	State , CounterValue
		Error	ErrorCode, ErrorInfo

2.1.3.2 Parameter

State

State should only contain either "ON" or "OFF". Default value is "OFF".

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	StateOn	OFF
		0x01	StateOff	ON

Reserved

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

Timeout

This value determines the time of observation. On timeout, State changes to "OFF" automatically. If this value is set to 0xFFFF, the observation time is infinite (default value).

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	25...65535	1	ms

CounterValue

Contains the actual value of the counter.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

Notes: