

MOST

Media Oriented Systems Transport

Multimedia and Control
Networking Technology

MOST Specification Rev. 3.0 Application Note

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Document History

Initial Version

Change Ref.	Section	Changes
1V0_001	General	Initial Version.

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]	MOST FBlock NetBlock Specification	3.0.1
[3]	MOST FBlock DebugMessages Specification	1.0.1

1 Application Note

This application note is based on MOST Specification Rev. 3.0. It describes best practices and pitfalls and how the latter can be avoided when implementing MOST devices.

1.1 Network Management

1.1.1 Central Registry “full”

The NetworkMaster should use a unique mechanism to indicate the condition Central Registry “full”, including information which FBlock/InstID/Slave causes the condition: the NetworkMaster should send a DebugMessage (see DebugMessages FBlock [3]).

This solution is helpful for debugging but the slave device will get no information about the “Central Registry full” condition. Since Central Registry “full” is no normal use case and will occur only in the case of a configuration failure of the system, debugging information should be sufficient. A failure reaction of the slave device is not necessary.

1.2 Notification

1.2.1 Notification of DynamicArrays

If a controller receives an unknown tag of a DynamicArray from a slave device (an unknown tag being a tag that does not exist in the copy of the DynamicArray that is stored in the controller), the controller should request the complete DynamicArray from the slave to avoid discrepancies between the slave and the controller.

1.2.2 Implicit notification

Error handling of notification matrix does not distinguish between implicit notification entries and normal notification entries: if the implicit notifications are set before the DeviceID of the controller is available (e.g., due to delayed startup of the device), the notification entry will be deleted from the Notification Matrix, based on normal error handling.

To increase robustness of implicit notification, it is recommended to use only group addresses for the implicit notification mechanism.

Reason: this will reduce the risk that no device is available and the implicit notification entry will be deleted from the Notification Matrix. The mechanism will be robust as long as at least one device of the group exists in the MOST network.

In the case that the sending device belongs to the group that is addressed by implicit notification, at least one receiving device exists.

1.3 Message Transport

1.3.1 Retransmissions

In case a retransmission on higher level will be performed due to timeout $t_{\text{WaitForProperty}}$, the application has to be able to handle multiple responses from the answering node. One response could be a delayed response to the original request. A second response could be triggered by the retransmission.

1.3.2 Short delays during Ethernet transmission

Due to the general design of Ethernet transmission, short delays during Ethernet transmission can occur even when using MOST (delay in range of low-level retries). In the case that an application cannot tolerate such short delays (and requires deterministic behavior) during Ethernet transmission, QoS IP has to be used.

In general, QoS IP should be used if deterministic data transmission of Ethernet frames is required.

1.4 Exceptional Conditions

1.4.1 Securing streaming signals

System Integrator integration tests have to consider test cases to test the mechanism for securing streaming signals of a device; for example, securing streaming signals when entering "DeviceStandby".

1.4.2 Over-temperature detection

In some operating modes (e.g., Device Shutdown), over-temperature conditions cannot be detected by the application.

In the case that a device supports those operating modes, an additional protection mechanism should be implemented to disable Tx-FOT in case of over-temperature to avoid damage of Tx-FOT.

Alternatively, a device that is not able to perform over-temperature monitoring in Device Shutdown, could deny entering Device Shutdown.

1.5 Addressing Modes

1.5.1 Arbitration and Scheduling

When using the 16 bit and 48 bit addressing modes simultaneously, arbitration and scheduling need to be considered.

Notes: