

MOST

Media Oriented Systems Transport

Multimedia and Control
Networking Technology

MOST FBlock TVTuner

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MOSTCO CONFIDENTIAL

See page 3 for the terms of disclosure



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BIBLIOGRAPHY	5
1 INTRODUCTION	8
2 FBLOCK DEFINITION	8
2.1 TVTuner (FBlockID=0x42)	8
2.1.1 TunedProgram (0x200)	10
2.1.2 TuneTo (0x201)	13
2.1.3 TuneUp (0x202)	15
2.1.4 TuneDown (0x203)	16
2.1.5 StoreProgram (0x204)	17
2.1.6 AutoStore (0x205)	19
2.1.7 ProgramList (0x206)	20
2.1.8 BrowserList (0x207)	22
2.1.9 BrowserCountry (0x208)	25
2.1.10 AlternativeFrequencies (0x209)	26
2.1.11 Source (0x20A)	28
2.1.12 SwitchSource (0x20B)	29
2.1.13 CountryCodes (0x20C)	30
2.1.14 TVRegMode (0x400)	31
2.1.15 TVFixMode (0x401)	32
2.1.16 FrequencyList (0x402)	33
2.1.17 GetVTPage (0x403)	35
2.1.18 RemovePageNotification (0x404)	37
2.1.19 GetTopKeys (0x405)	38
2.1.20 StoreFrequency (0x406)	40
2.1.21 AutoStoreFrequency (0x407)	42
2.1.22 ChannelList (0x408)	43
2.1.23 AVInfo (0x409)	45
2.1.24 Color (0x40A)	47
2.1.25 Contrast (0x40B)	48
2.1.26 Brightness (0x40C)	49
2.1.27 Tint (0x40D)	50

Bibliography

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

Number	Document	Revision
[1]	MOST Specification	2.5
[2]	MOST Specification	3.0
[3]	MOST FBlock GeneralFBlock	2.5.1
[4]	MOST FBlock GeneralFBlock	3.0.3

Document History

Changes MOST TVTuner FBlock 2V3-02 to MOST TVTuner FBlock Rev. 2.3.3

Change Ref.	FktID	Changes
2.3.3-001	General	<ul style="list-style-type: none"> Removed list of released FBlocks, which is of no relevance to this FBlock. Added references to MOST Specification Revisions 2.5 and 3.0 as well as GeneralFBlock Revisions 2.5.1 and 3.0.3. Correction of clerical errors. Added SymbolicNames to all Enums. Added Occurrence attribute to all functions, based on function ID: 0x200...20C are mandatory, 0x400...0x40D are optional. Corrected incorrect unit assignments.
2.3.3-002	0x000	Removed function FktIDs because it is contained in the GeneralFBlock.
2.3.3-003	0x001	Removed function Notification because it is contained in the GeneralFBlock.
2.3.3-004	0x002	Removed function NotificationCheck because it is contained in the GeneralFBlock.
2.3.3-005	0x100	Removed function SourceInfo because it is contained in the GeneralFBlock.
2.3.3-006	0x101	Removed function Allocate because it is contained in the GeneralFBlock.
2.3.3-007	0x102	Removed function DeAllocate because it is contained in the GeneralFBlock.
2.3.3-008	0x103	Removed function SourceActivity because it is contained in the GeneralFBlock.
2.3.3-009	0x104	Removed function SourceName because it is contained in the GeneralFBlock.
2.3.3-010	0x105	Removed function SourceConnect because it is contained in the GeneralFBlock.
2.3.3-011	0x106	Removed function SourceDisConnect because it is contained in the GeneralFBlock.
2.3.3-012	0x107	Removed function SourceRouting because it is contained in the GeneralFBlock.
2.3.3-013	0x116	Removed function SyncDataInfo because it is contained in the GeneralFBlock.
2.3.3-014	0x200	TunedProgram: Changed System and Status parameters from Boolean to Unsigned Byte because they represent BoolFields.
2.3.3-015	0x201	TuneTo: Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter.
2.3.3-016	0x202	TuneUp: Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter.
2.3.3-017	0x203	TuneDown: Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter.
2.3.3-018	0x204	StoreProgram: <ul style="list-style-type: none"> Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter. Changed System parameter from Boolean to Unsigned Byte because it represents a BoolField.
2.3.3-019	0x205	AutoStore: Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter.
2.3.3-020	0x206	ProgramList: Changed System parameter from Boolean to Unsigned Byte because it represents a BoolField.
2.3.3-021	0x207	BrowserList: Changed System and Status parameters from Boolean to Unsigned Byte because they represent BoolFields.
2.3.3-022	0x20B	SwitchSource: Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter.
2.3.3-023	0x402	FrequencyList: Changed System parameter from Boolean to Unsigned Byte because it represents a BoolField.
2.3.3-024	0x403	GetTVPage: Changed DataContent parameter from Boolean to Unsigned Byte because it represents a BoolField.
2.3.3-025	0x406	StoreFrequency: <ul style="list-style-type: none"> Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter. Changed System parameter from Boolean to Unsigned Byte because it represents a BoolField.
2.3.3-026	0x407	AutoStoreFrequency: Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter.
2.3.3-027	0x408	ChannelList: <ul style="list-style-type: none"> Replaced Non-Ack OPTypes with OPTypes with SenderHandle parameter. Changed System parameter from Boolean to Unsigned Byte because it represents a BoolField.

Change Ref.	FktID	Changes
2.3.3-028	0x409	AVInfo: Changed System and Status parameters from Boolean to Unsigned Byte because they represent BoolFields.
2.3.3-029	-	Removed empty Dynamic Specification chapter.

Changes MOST TVTunerFBlock 2V3-01 to MOST TVTunerFBlock 2V3-02

Change Ref.	FktID	Changes
2.3.2-001	0x200	- Changed data type of parameter Country to String with MaxSize 2
2.3.2-002	0x206	- Changed data type of parameter Country to String with MaxSize 2
2.3.2-003	0x207	- Changed data type of parameter Country to String with MaxSize 2
2.3.2-004	0x208	- Changed name of parameter Code to Country and set MaxSize 2 instead of #NULL#
2.3.2-005	0x20C	- Changed name of parameter SatellitelDs to Country
2.3.2-006	0x403	- Changed OPType StartAck to StartResultAck
2.3.2-007	0x404	- Changed OPType StartAck to StartResultAck
2.3.2-008	0x405	- Changed OPType StartAck to StartResultAck

Changes MOST TVTunerFBlock 2V3-00 to MOST TVTunerFBlock 2V3-01

Change Ref.	FktID	Changes
2.3.1-001	0x002	- Changed description of parameter FktIDList.

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 FBlock Definition

2.1 TVTuner (FBlockID=0x42)

The MOST FBlock TVTuner provides the functionality of a TV tuner and a videotext decoder. TV stations can be tuned by channel number, station (preset) number or be chosen from a list of available programs.

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

For GeneralFBlock Rev. 2.5.1, the included functions are:

FktID	Function name
0x000	FktIDs
0x001	Notification
0x002	NotificationCheck
0x010	Version
0x100	SourceInfo
0x101	Allocate
0x102	DeAllocate
0x103	SourceActivity
0x104	SourceConnect
0x105	SourceDisConnect
0x106	SourceRouting
0x107	SourceName
0x116	SyncDataInfo

For GeneralFBlock Rev. 3.0.3, the included functions are:

FktID	Function name
0x000	FktIDs
0x001	Notification
0x002	NotificationCheck
0x011	FBlockInfo
0x100	SourceInfo
0x101	Allocate
0x102	DeAllocate
0x103	SourceActivity
0x104	SourceName
0x116	StreamDataInfo

Function Overview		
FktID	Name	Occurrence
0x200	TunedProgram	Mandatory
0x201	TuneTo	Mandatory
0x202	TuneUp	Mandatory
0x203	TuneDown	Mandatory
0x204	StoreProgram	Mandatory
0x205	AutoStore	Mandatory
0x206	ProgramList	Mandatory
0x207	BrowserList	Mandatory
0x208	BrowserCountry	Mandatory
0x209	AlternativeFrequencies	Mandatory
0x20A	Source	Mandatory
0x20B	SwitchSource	Mandatory
0x20C	CountryCodes	Mandatory
0x400	TVReqMode	Optional
0x401	TVFixMode	Optional
0x402	FrequencyList	Optional
0x403	GetVTPage	Optional
0x404	RemovePageNotification	Optional
0x405	GetTopKeys	Optional
0x406	StoreFrequency	Optional
0x407	AutoStoreFrequency	Optional
0x408	Channellist	Optional
0x409	AVInfo	Optional
0x40A	Color	Optional
0x40B	Contrast	Optional
0x40C	Brightness	Optional
0x40D	Tint	Optional

2.1.1 TunedProgram (0x200)

Occurrence: Mandatory

Returns information about the currently tuned program.

2.1.1.1 Format of Function

Function classes: Record of { Number String Boolean Number String Boolean Number Number }

FBlock	Function	OPType	Parameter
TVTuner (0x42)	TunedProgram (0x200)	Get	Pos
		Status	Pos, Data
		Error	ErrorCode, ErrorInfo

2.1.1.2 Parameter

Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or inquired.

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

Data

The content of Data depends on Pos.

Basis data type	Length	Description	
Record	-	Pos	Data
		{ x=0 }	{PID, ProgramName, System, Channel, Country, Status, Quality, FieldStrength}
		{ x=1 }	{PID}
		{ x=2 }	{ProgramName}
		{ x=3 }	{System}
		{ x=4 }	{Channel}
		{ x=5 }	{Country}
		{ x=6 }	{Status}
		{ x=7 }	{Quality}
		{ x=8 }	{FieldStrength}

PID

Program identifier.

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

ProgramName

Name of the program.

Basis data type	MaxSize
String	10

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

Channel

Tuned channel.

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

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

Status

Status information.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	No RF detected
		True	RF detected
	Bit 1	False	No video signal detected
		True	Video signal detected
	Bit 2	False	No VPS signal detected
		True	VPS signal detected
	Bit 3	False	No regional splitting
		True	Regional splitting
	Bit 4	False	No VT available
		True	VT available
	Bit 5	False	No VT TOP text available
		True	VT TOP text available
	Bit 6	False	No VT DRCS is supported
		True	VT DRCS is supported
	Bit 7	False	No VT page notifications are pending
		True	VT page notifications are pending

Quality

Quality of the tuned program.

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

FieldStrength

Field strength of the tuned program.

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

2.1.2 TuneTo (0x201)

Occurrence: Mandatory

This function tunes in a certain channel, program name or entry from the program list.

2.1.2.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	TuneTo (0x201)	StartResultAck	SenderHandle , Mode , Data
		ErrorAck	SenderHandle , ErrorCode , ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Success
		Error	ErrorCode , ErrorInfo

2.1.2.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Mode

Tune mode.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x01...0x03	0x01	ChannelOrEntry	Channel/Entry in frequency or garage list
		0x02	PID	Program identifier (PID)
		0x03	ProgramList	Program list

Data

Contains Index, Channel or Program, depending on mode

Basis data type	Length	Condition	Description
Stream	3	Mode = 0x01	Content: Channel , Country
		Mode = 0x02	Content: PID
		Mode = 0x03	Content: ProgramListIndex

Channel

Channel number, if tuned by channel.

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

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

PID

Program identifier.

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

ProgramListIndex

List index of the program memory.

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

Success

Result of the tuning process.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	Failure	Failure
		0x01	Success	Success

2.1.3 TuneUp (0x202)

Occurrence: Mandatory

This function tunes up one channel, program number or entry from the browser list. Besides it is possible to invoke an automatic seek mechanism.

2.1.3.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	TuneUp (0x202)	StartResultAck	SenderHandle , Mode
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Success
		Error	ErrorCode, ErrorInfo

2.1.3.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Mode

Tuning mode: The meaning of the value is the same as in the method TuneDown.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x01...0x03	0x01	TuningByChannel	tuning by channel
		0x02	TuningByProgramNumber	tuning by program number
		0x03	TuningByProgramList	tuning by program list index

Success

Result of the tuning process.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	Failure	Failure
		0x01	Success	Success

2.1.4 TuneDown (0x203)

Occurrence: Mandatory

This function tunes down one channel, program number or entry from the browser list. Besides it is possible to invoke an automatic seek mechanism.

2.1.4.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	TuneDown (0x203)	StartResultAck	SenderHandle , Mode
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Success
		Error	ErrorCode, ErrorInfo

2.1.4.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Mode

Tuning mode: The meaning of the value is the same as in the method TuneUp.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x01...0x04	0x01	TuningByChannel	Tuning by Channel
		0x02	TuningByBrowserList	Tuning by BrowserList
		0x03	TuningByProgramList	Tuning by ProgramList
		0x04	AutomaticSeekNextChannel	Automatic seek next channel

Success

Result of the tuning process.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	Failure	Failure
		0x01	Success	Success

2.1.5 StoreProgram (0x204)

Occurrence: Mandatory

Stores the currently tuned or an individual program on the given station number.

2.1.5.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	StoreProgram (0x204)	StartResultAck	SenderHandle , Number , Mode , Data
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Number
		Error	ErrorCode, ErrorInfo

2.1.5.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Number

The program number under which the currently tuned or individual program shall be stored.

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

Mode

Specifies the storage mode.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	ActualTunedProgram	Actual tuned program
		0x01	Individual	Individual

Data

Dependent on Mode additional information will be transferred in Data.

Basis data type	Length	Condition	Description
Stream		Mode = 0x00	
		Mode = 0x01	Content: Country , Channel , PID , ProgramName , System

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

Channel

Tuned channel.

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

PID

Program identifier.

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

ProgramName

Name of the program.

Basis data type	MaxSize
String	10

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

2.1.6 AutoStore (0x205)

Occurrence: Mandatory

Stores all TV programs that can currently be received (browser list), beginning with the given station number.

2.1.6.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	AutoStore (0x205)	StartResultAck	SenderHandle , Begin
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Begin , End
		Error	ErrorCode, ErrorInfo

2.1.6.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Begin

The program number under which the first detected program is to be stored or has been stored, respectively.

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

End

The number under which the last detected program has been stored.

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

2.1.7 ProgramList (0x206)

Occurrence: Mandatory

The program list contains all informations about the stored program stations.

2.1.7.1 Format of Function

Function classes: Array of { Record of { Number String Boolean Number String Boolean } }

FBlock	Function	OPType	Parameter
TVTuner (0x42)	ProgramList (0x206)	Get	Pos
		Status	Pos, Data
		Error	ErrorCode, ErrorInfo

2.1.7.2 Parameter

Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or inquired.

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

Data

Record of { Program, Name, ChannelCount }

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{PID[1], ProgramName[1], System[1], Channel[1], Country[1], Selected[1],...,PID[NMax], ProgramName[NMax], System[NMax], Channel[NMax], Country[NMax], Selected[NMax]}

PID

Program identifier.

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

ProgramName

Name of the program.

Basis data type	MaxSize
String	10

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

Channel

Tuned channel.

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

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

Selected

Identifies whether the program list entry is selected or not.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Selected
		False	Not selected

2.1.8 BrowserList (0x207)

Occurrence: Mandatory

The browser list contains all informations about the programs that can be currently received.

2.1.8.1 Format of Function

Function classes: Array of { Record of { Number String Boolean Number String Boolean Boolean Number Number } }

FBlock	Function	OPType	Parameter
TVTuner (0x42)	BrowserList (0x207)	Get	Pos
		Status	Pos, Data
		Error	ErrorCode, ErrorInfo

2.1.8.2 Parameter

Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or inquired.

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

Data

The content of Data depends on Pos.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{PID[1], ProgramName[1], System[1], Channel[1], Country[1], Selected[1], Status[1], Quality[1], FieldStrength[1],...,PID[NMax], ProgramName[NMax], System[NMax], Channel[NMax], Country[NMax], Selected[NMax], Status[NMax], Quality[NMax], FieldStrength[NMax]}

PID

Program identifier.

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

ProgramName

Name of the program.

Basis data type	MaxSize
String	10

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

Channel

Tuned channel.

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

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

Selected

Identifies whether the browser list entry is selected or not.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Selected
		False	Not selected

Status

Status information.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	No RF detected
		True	RF detected
	Bit 1	False	No video signal detected
		True	Video signal detected
	Bit 2	False	No VPS signal detected
		True	VPS signal detected
	Bit 3	False	No regional splitting
		True	Regional splitting
	Bit 4	False	No VT available
		True	VT available
	Bit 5	False	No VT TOP text available
		True	VT TOP text available
	Bit 6	False	No VT DRCS is supported
		True	VT DRCS is supported
	Bit 7	False	No VT page notifications are pending
		True	VT page notifications are pending

Quality

Quality of the tuned program.

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

FieldStrength

Field strength of the tuned program.

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

2.1.9 BrowserCountry (0x208)

Occurrence: Mandatory

Set or return the country code, used by the browser.

2.1.9.1 Format of Function

Function classes: Text

FBlock	Function	OPType	Parameter
TVTuner (0x42)	BrowserCountry (0x208)	Set	Country
		Get	-
		SetGet	Country
		Status	Country
		Error	ErrorCode, ErrorInfo

2.1.9.2 Parameter

Country

ISO 3166 country code for channel table (e.g. "DE" = Germany). If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

2.1.10 AlternativeFrequencies (0x209)

Occurrence: Mandatory

Gives the list of channels on which the tuned program, entry in browser list (over program name) or entry in program list is available.

2.1.10.1 Format of Function

Function classes: Unclassified Property

FBlock	Function	OPType	Parameter
TVTuner (0x42)	Alternative Frequencies (0x209)	Get	ParamType , ParamTypeDescription
		Status	ChannelList
		Error	ErrorCode, ErrorInfo

2.1.10.2 Parameter

ParamType

Specifies the transferred parameters.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x02	0x00	TunedProgram	Tuned program
		0x01	ProgramIdentifier	Program identifier
		0x02	ProgramList	Program list

ParamTypeDescription

Dependent on ParamType additional information will be transferred in ParamTypeDescription

Basis data type	Length	Condition	Description
Stream		ParamType = 0x00	
		ParamType = 0x01	Content: PID
		ParamType = 0x02	Content: ProgramListIndex

PID

Program identifier.

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

ProgramListIndex

List index of the program memory.

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

ChannelList

List of particular channels.

Basis data type	Length	Condition	Description
Stream		-	Content: Channel (repeated) Channel {, Channel}

Channel

Channel number.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

2.1.11 Source (0x20A)

Occurrence: Mandatory

Returns the current source.

2.1.11.1 Format of Function

Function classes: Enumeration

FBlock	Function	OPType	Parameter
TVTuner (0x42)	Source (0x20A)	Get	-
		Status	SourceNo
		Error	ErrorCode, ErrorInfo

2.1.11.2 Parameter

SourceNo

Source number.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x06	0x00		TV
		0x01	AV1	AV2
		0x02	AV2	AV2
		0x03	AV3	AV3
		0x04	AV4	AV4
		0x05	AV5	AV5
		0x06	AV6	AV6

2.1.12 SwitchSource (0x20B)

Occurrence: Mandatory

Change the source of the TV tuner.

2.1.12.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	SwitchSource (0x20B)	StartResultAck	SenderHandle , SourceNo
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , SourceNo
		Error	ErrorCode, ErrorInfo

2.1.12.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

SourceNo

Source number.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x06	0x00		TV
		0x01	AV1	AV2
		0x02	AV2	AV2
		0x03	AV3	AV3
		0x04	AV4	AV4
		0x05	AV5	AV5
		0x06	AV6	AV6

2.1.13 CountryCodes (0x20C)

Occurrence: Mandatory

Returns a list of country codes which are supported by the tuner.

2.1.13.1 Format of Function

Function classes: Array of { String }

FBlock	Function	OPType	Parameter
TVTuner (0x42)	CountryCodes (0x20C)	Get	Pos
		Status	Pos , Data
		Error	ErrorCode, ErrorInfo

2.1.13.2 Parameter

Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or inquired.

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

Data

The content depends on Pos.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0 }	{Country[1],...,Country[NMax]}
		{ x> 0 }	{Country[x]}

Country

ISO 3166 country code for channel table (e.g. "DE" = Germany). If Country is set to "XA", the given channel will be used as an index or the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

2.1.14 TVRegMode (0x400)

Occurrence: Optional

This property controls the behaviour of the regional mode.

2.1.14.1 Format of Function

Function classes: Switch

FBlock	Function	OPType	Parameter
TVTuner (0x42)	TVRegMode (0x400)	Set	RegMode
		Get	-
		SetGet	RegMode
		Status	RegMode
		Error	ErrorCode, ErrorInfo

2.1.14.2 Parameter

RegMode

Regional mode on / off

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Regional mode on
		False	Regional mode off

2.1.15 TVFixMode (0x401)

Occurrence: Optional

This property controls the behavior of the fix mode (alternative frequencies evaluation).

2.1.15.1 Format of Function

Function classes: Switch

FBlock	Function	OPType	Parameter
TVTuner (0x42)	TVFixMode (0x401)	Set	FixMode
		Get	-
		SetGet	FixMode
		Status	FixMode
		Error	ErrorCode, ErrorInfo

2.1.15.2 Parameter

FixMode

FixMode on/off.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Fix mode on
		False	Fix mode off

2.1.16 FrequencyList (0x402)

Occurrence: Optional

The frequency list can be used as an alternative channel list, which is independent from a special country.

2.1.16.1 Format of Function

Function classes: Array of { Record of { Number Boolean } }

FBlock	Function	OPType	Parameter
TVTuner (0x42)	FrequencyList (0x402)	Get	Pos
		Status	Pos , Data
		Error	ErrorCode, ErrorInfo

2.1.16.2 Parameter

Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or inquired.

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

Data

The content depends on Pos.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{Frequency[1], System[1],...,Frequency[NMax], System[NMax]}

Frequency

If Frequency is set to zero, the corresponding list entry is not occupied.

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

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

2.1.17 GetVTPage (0x403)

Occurrence: Optional

Download one VT page, sub-page or several rows of them from the VT decoder.

2.1.17.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	GetVTPage (0x403)	StartResultAck	SenderHandle , PageNumber , RowNumber , Notify
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , DataContent , Data
		Error	ErrorCode, ErrorInfo

2.1.17.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

PageNumber

Contains the VT page and sub-page number in BCD notation (To address special pages the BCD code can be extended with the values A-F). The sub-page is coded in the least significant nibble.

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

RowNumber

Contains the requested row number or an other handle.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0x18	0x00	CompleteVTPage	Complete VT page
		0x01 ... 0x18		Special row

Notify

Notification for page updates (this can also be some parts (rows) of the page). Exception: Since the first row of a VT page (page header) contains time information, this row is permanently updated with the current time.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Send also future updates
		False	Just send the page or row once

DataContent

Describes the content of the data stream.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	LSB Number of sibling sub-pages
		True	... Number of sibling sub-pages
	Bit 1	False	... Number of sibling sub-pages
		True	... Number of sibling sub-pages
	Bit 2	False	... Number of sibling sub-pages
		True	MSB Number of sibling sub-pages
	Bit 3	False	MSB Number of sibling sub-pages
		True	Request not complete
	Bit 4	False	Request not complete
		True	Request complete

Data

Content of the data stream: DataStream ::= For (all available rows) { Byte0: Row number Byte1...40: Row information }

Basis data type	Length	Condition	Description
Stream		-	DataStream

2.1.18 RemovePageNotification (0x404)

Occurrence: Optional

This function is used to inform the VT decoder that the application is not interested in the given VT page anymore and hence updates of the page shall not be sent to the application.

2.1.18.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	RemovePage Notification (0x404)	StartResultAck	SenderHandle
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle

2.1.18.2 Parameter

SenderHandle

In this case, the SenderHandle must be the same as in function GetVTPage, because it identifies the notification.

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

2.1.19 GetTopKeys (0x405)

Occurrence: Optional

This function returns information about Top Text settings for a VT page.

2.1.19.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	GetTopKeys (0x405)	StartResultAck	SenderHandle , PageNumber
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Options , Data

2.1.19.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

PageNumber

Contains the VT page and sub-page number in BCD notation (To address special pages the BCD code can be extended with the values A-F). The sub-page is coded in the least significant nibble.

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

Options

Options for TopText.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	NoTopText	No Top Text
		0x01	NormalPage	Normal Page
		0x02	BlockPage	Block Page
		0x03	GroupPage	Group page

Data

The content of Data depends on Options.

Basis data type	Length	Condition	Description
Stream		Options = 0x00	
		Options = 0x01 ... 0x03	Content: BlockPage , GroupPage , NextPage , PrevPage , BlockName , GroupName

BlockPage

Contains the block page number in BCD notation.

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

GroupPage

Contains the group page number in BCD notation.

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

NextPage

Contains the next page number in BCD notation.

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

PrevPage

Contains the previous page number in BCD notation.

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

BlockName

Contains the block name. If no block name available, the page number will be returned as string.

Basis data type	MaxSize
String	12

GroupName

Contains the group name. If no group name is available, the page number will be returned as string.

Basis data type	MaxSize
String	12

2.1.20 StoreFrequency (0x406)

Occurrence: Optional

Stores the frequency and system code, given in parameters, in the frequency list.

2.1.20.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	StoreFrequency (0x406)	StartResultAck	SenderHandle , Number , Frequency , System
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , Number
		Error	ErrorCode, ErrorInfo

2.1.20.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Number

The list index number under which the given parameters are stored.

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

Frequency

The desired frequency. If Frequency is zero, the corresponding list entry will be reset.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	Hz

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

2.1.21 AutoStoreFrequency (0x407)

Occurrence: Optional

Stores all channel table entries from a given country code in the frequency list. If there are less entries in the channel table than in frequency list, the rest are marked as free (frequency is set to zero).

2.1.21.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	AutoStore Frequency (0x407)	StartResultAck	SenderHandle , Country
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		Result	Country
		ResultAck	SenderHandle , Country
		Error	ErrorCode, ErrorInfo

2.1.21.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index for the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

2.1.22 ChannelList (0x408)

Occurrence: Optional

With this method it is possible to ask for a complete channel list to the country code, given in parameter.

2.1.22.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
TVTuner (0x42)	ChannelList (0x408)	StartResultAck	SenderHandle , Country
		ErrorAck	SenderHandle , ErrorCode, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , MaxChannels , ChannelList
		Error	ErrorCode, ErrorInfo

2.1.22.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

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

Country

ISO 3166 country code for channel table. If Country is set to "XA", the given channel will be used as an index to the frequency list. If Country is set to "XB" a special garage list is used.

Basis data type	MaxSize
String	2

MaxChannels

Number of entries in ChannelList.

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

ChannelList

Basis data type	Length	Condition	Description
Stream		-	Content: Frequency (repeated), System (repeated) Frequency, System, {Frequency, System}

Frequency

If Frequency is zero, the corresponding channel is not occupied.

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

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

2.1.23 AVInfo (0x409)

Occurrence: Optional

Information about the currently set AV channel.

2.1.23.1 Format of Function

Function classes: Record of { String Boolean Boolean }

FBlock	Function	OPType	Parameter
TVTuner (0x42)	AVInfo (0x409)	Get	Pos
		Status	Pos , Data
		Error	ErrorCode, ErrorInfo

2.1.23.2 Parameter

Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or inquired.

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

Data

The content depends on Pos.

Basis data type	Length	Description	
Record	-	Pos	Data
		{ x=0 }	{AVName, System, Status}
		{ x=1 }	{AVName}
		{ x=2 }	{System}
		{ x=3 }	{Status}

AVName

Name of the AV source.

Basis data type	MaxSize
String	10

System

TV system standard.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Vertical Frequency: 50 Hz
		True	Vertical Frequency: 60 Hz
	Bit 1	False	Bit1/Bit2: 0 0 Unknown format
		True	Bit1/Bit2: 0 1 4/3 format
	Bit 2	False	Bit1/Bit2: 1 0 16/9 format
		True	Bit1/Bit2: 1 1 Unknown format
	Bit 3	False	Reserved
		True	Reserved
	Bit 4	False	Bit4/Bit5: 0 0 Unknown Standard
		True	Bit4/Bit5: 0 1 NTSC Standard
	Bit 5	False	Bit4/Bit5: 1 0 PAL Standard
		True	Bit4/Bit5: 1 1 SECAM Standard
	Bit 6 ... 7	-	reserved

Status

Status information.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	No RF detected
		True	RF detected
	Bit 1	False	No video signal detected
		True	Video signal detected
	Bit 2 ... 7	-	reserved

2.1.24 Color (0x40A)

Occurrence: Optional

With this property it is possible to adjust the color.

2.1.24.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
TVTuner (0x42)	Color (0x40A)	Set	Color
		Get	-
		SetGet	Color
		Increment	NSteps
		Decrement	NSteps
		Status	Color
		Error	ErrorCode, ErrorInfo

2.1.24.2 Parameter

Color

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...100	5	none

NSteps

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	1...255	1	none

2.1.25 Contrast (0x40B)

Occurrence: Optional

With this property it is possible to adjust the contrast.

2.1.25.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
TVTuner (0x42)	Contrast (0x40B)	Set	Contrast
		Get	-
		SetGet	Contrast
		Increment	NSteps
		Decrement	NSteps
		Status	Contrast
		Error	ErrorCode, ErrorInfo

2.1.25.2 Parameter

Contrast

No Description

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...100	5	none

NSteps

No Description

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	1...255	1	none

2.1.26 Brightness (0x40C)

Occurrence: Optional

With this property it is possible to adjust the brightness.

2.1.26.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
TVTuner (0x42)	Brightness (0x40C)	Set	Brightness
		Get	-
		SetGet	Brightness
		Increment	NSteps
		Decrement	NSteps
		Status	Brightness
		Error	ErrorCode, ErrorInfo

2.1.26.2 Parameter

Brightness

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...100	5	none

NSteps

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	1...255	1	none

2.1.27 Tint (0x40D)

Occurrence: Optional

With this property it is possible to adjust the tint.

2.1.27.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
TVTuner (0x42)	Tint (0x40D)	Set	Tint
		Get	-
		SetGet	Tint
		Increment	NSteps
		Decrement	NSteps
		Status	Tint
		Error	ErrorCode, ErrorInfo

2.1.27.2 Parameter

Tint

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...100	5	none

NSteps

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	1...255	1	none

Notes: