MCAL Configuration Verification Manual for Fr_17_Eray

32-bit TriCore™ AURIX™ TC3xx microcontroller family

About this document

Scope and purpose

This Configuration Data Reference document is applicable to all TC3xx devices in the TriCore™ AURIX™ family of 32-bit microcontrollers.

The purpose of this document is to facilitate the integrator to verify the generated code based on the input configuration parameters. This document describes details of structures, defines, macros and variables generated from the configuration parameters.

Intended audience

This document is intended for integrators who need to understand the logic of the generated configuration code of AURIX™ AUTOSAR MCAL.

Reference documents

This document should be read in conjunction with the following documents:

- AURIX™ TC3XX MCAL User Manual Fr_17_Eray

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1 Fr_17_Eray driver

This chapter describes the details of the configuration data generated from the FR driver.

1.1 File: Fr_17_Eray_Cfg.h

The generated header file contains all pre-compile configuration parameters. Pre-compile time configuration allows decoupling of the static configuration from implementation. The file is generated in 'inc' folder.

1.1.1 Macro: FR_17_ERAY_AR_RELEASE_MAJOR_VERSION

Table 1 FR_17_ERAY_AR_RELEASE_MAJOR_VERSION

Name	FR_17_ERAY_AR_RELEASE_MAJOR_VERSION	
Description	Major version number of AUTOSAR release on which the Fr_17_Eray implementation is based on.	
Verification method	The macro is generated with the value present in 'CommonPublishedInformation/ArMajorVersion'. *Note: The macro is not user configurable.*	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h file with ArMajorVersion 4	#define FR_17_ERAY_AR_RELEASE_MAJOR_VERSION (4U)

1.1.2 Macro: FR_17_ERAY_AR_RELEASE_MINOR_VERSION

Table 2 FR_17_ERAY_AR_RELEASE_MINOR_VERSION

Name	FR_17_ERAY_AR_RELEASE_MINOR_VERSION	
Description	Minor version number of AUTOSAR release on which the Fr_17_Eray implementation is based on.	
Verification method	The macro is generated with the value present in 'CommonPublishedInformation/ArMinorVersion'. *Note: The macro is not user configurable.*	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h file with ArMinorVersion 2	#define FR_17_ERAY_AR_RELEASE_MINOR_VERSION (2U)

1.1.3 Macro: FR_17_ERAY_AR_RELEASE_REVISION_VERSION

Table 3 FR_17_ERAY_AR_RELEASE_REVISION_VERSION

Name	FR_17_ERAY_AR_RELEASE_REVISION_VERSION	
Description	Revision version number of AUTOSAR release on which the Fr_17_Eray implementation is based on.	
Verification method	The macro is generated with the value present in 'CommonPublishedInformation/ArPatchVersion'. *Note: The macro is not user configurable.*	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h file with ArPatchVersion 2	#define FR_17_ERAY_AR_RELEASE_REVISION_VERSION (2U)

1.1.4 Macro: FR_17_ERAY_SW_MAJOR_VERSION

Table 4 FR_17_ERAY_SW_MAJOR_VERSION

Name	FR_17_ERAY_SW_MAJOR_VERSION	
Description	Major version number of the Fr_17_Eray module.	
Verification method	The macro is generated with the value present in 'CommonPublishedInformation/SwMajorVersion'. *Note: The macro is not user configurable.*	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h file with SwMajorVersion 10	#define FR_17_ERAY_SW_MAJOR_VERSION (10U)

1.1.5 Macro: FR_17_ERAY_SW_MINOR_VERSION

Table 5 FR_17_ERAY_SW_MINOR_VERSION

Name	FR_17_ERAY_SW_MINOR_VERSION	
Description	Minor version number of the Fr_17_Eray module.	
Verification method	The macro is generated with the value present in 'CommonPublishedInformation/SwMinorVersion'. *Note: The macro is not user configurable.*	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h file with SwMinorVersion 10	#define FR_17_ERAY_SW_MINOR_VERSION (10U)

1.1.6 Macro: FR_17_ERAY_SW_PATCH_VERSION

Table 6 FR_17_ERAY_SW_PATCH_VERSION

Name	FR_17_ERAY_SW_PATCH_VERSION	
Description	Patch level version number of the Fr_17_Eray module.	
Verification method	The macro is generated with the value present in 'CommonPublishedInformation/SwPatchVersion'. *Note: The macro is not user configurable.*	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h file with SwPatchVersion 0	#define FR_17_ERAY_SW_PATCH_VERSION (0U)

1.1.7 Macro: FR_17_ERAY_INIT_API_MODE

Table 7 FR_17_ERAY_INIT_API_MODE

Name	FR_17_ERAY_INIT_API_MODE	
Description	Decides the mode of execution of Init API.	
Verification method	The macro is generated as FR_17_ERAY_MCAL_USER1 if configuration parameter FrInitApiMode is set to 'FR_MCAL_USER1' else the macro is generated as FR_17_ERAY_MCAL_SUPERVISOR.	
Example(s)	**Action**	**Generated output**
	Set FrInitApiMode as FR_MCAL_USER1	#define FR_17_ERAY_INIT_API_MODE (FR_17_ERAY_MCAL_USER1)
	Set FrInitApiMode as FR_MCAL_SUPERVISOR	#define FR_17_ERAY_INIT_API_MODE (FR_17_ERAY_MCAL_SUPERVISOR)

1.1.8 Macro: FR_17_ERAY_DEV_ERROR_DETECT

Table 8 FR_17_ERAY_DEV_ERROR_DETECT

Name	FR_17_ERAY_DEV_ERROR_DETECT	
Description	Enables/disables the Development Error Detection.	
Verification method	The macro is generated as STD_ON if FrDevErrorDetect configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrDevErrorDetect as True	#define FR_17_ERAY_DEV_ERROR_DETECT

		(STD_ON)
	Set FrDevErrorDetect as False	#define FR_17_ERAY_DEV_ERROR_DETECT (STD_OFF)

1.1.9 Macro: FR_17_ERAY_VERSION_INFO_API

Table 9 FR_17_ERAY_VERSION_INFO_API

Name	FR_17_ERAY_VERSION_INFO_API	
Description	Enables/disables Fr_17_Eray_GetVersionInfo API	
Verification method	The macro is generated as STD_ON if FrVersionInfoApi configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrVersionInfoApi as True	#define FR_17_ERAY_VERSION_INFO_API (STD_ON)
	Set FrVersionInfoApi as False	#define FR_17_ERAY_VERSION_INFO_API (STD_OFF)

1.1.10 Macro: FR_17_ERAY_PREPARE_LPDU

Table 10 FR_17_ERAY_PREPARE_LPDU

Name	FR_17_ERAY_PREPARE_LPDU	
Description	Enables/disables Fr_17_Eray_ PrepareLPdu API	
Verification method	The macro is generated as STD_ON if 'FrPrepareLPduSupport' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrPrepareLPduSupport as True	#define FR_17_ERAY_PREPARE_LPDU (STD_ON)
	Set FrPrepareLPduSupport as False	#define FR_17_ERAY_PREPARE_LPDU (STD_OFF)

1.1.11 Macro: FR_17_ERAY_RECONFIG_LPDU

Table 11 FR_17_ERAY_RECONFIG_LPDU

Name	FR_17_ERAY_RECONFIG_LPDU	
Description	Enable/disables Fr_17_Eray_ReconfigLPdu API.	
Verification method	The macro is generated as STD_ON if 'FrReconfigLPduSupport' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**

	Set FrReconfigLPduSupport as True	#define FR_17_ERAY_RECONFIG_LPDU (STD_ON)
	Set FrReconfigLPduSupport as False	#define FR_17_ERAY_RECONFIG_LPDU (STD_OFF)

1.1.12 Macro: FR_17_ERAY_DISABLE_LPDU

Table 12 FR_17_ERAY_DISABLE_LPDU

Name	FR_17_ERAY_DISABLE_LPDU	
Description	Enable/disables Fr_17_Eray_DisableLPdu API.	
Verification method	The macro is generated as STD_ON if 'FrDisableLPduSupport' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrDisableLPduSupport as True	#define FR_17_ERAY_DISABLE_LPDU (STD_ON)
	Set FrDisableLPduSupport as False	#define FR_17_ERAY_DISABLE_LPDU (STD_OFF)

1.1.13 Macro: FR_17_ERAY_NMVECTOR_ENABLE

Table 13 FR_17_ERAY_NMVECTOR_ENABLE

Name	FR_17_ERAY_NMVECTOR_ENABLE	
Description	Enable/disables Fr_17_Eray_GetNmVector API.	
Verification method	The macro is generated as STD_ON if 'FrNmVectorEnable' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrNmVectorEnable as True	#define FR_17_ERAY_NMVECTOR_ENABLE (STD_ON)
	Set FrNmVectorEnable as False	#define FR_17_ERAY_NMVECTOR_ENABLE (STD_OFF)

1.1.14 Macro: FR_17_ERAY_INDEX

Table 14 FR_17_ERAY_INDEX

Name	FR_17_ERAY_INDEX
Description	Instance ID of FR module.
Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrGeneral/FrIndex'

Example(s)	Action	Generated output
	Set FrIndex as 0	#define FR_17_ERAY_INDEX (0U)
	Set FrIndex as 240	#define FR_17_ERAY_INDEX (240U)

1.1.15 Macro: FR_17_ERAY_TIMEOUT_DURATION

Table 15 FR_17_ERAY_TIMEOUT_DURATION

Name	FR_17_ERAY_TIMEOUT_DURATION	
Description	Specifies the maximum time in nanoseconds for blocking function until a timeout is raised in short term wait loops.	
Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrGeneral/FrTimeoutDurationFactor'	
Example(s)	**Action**	**Generated output**
	Set FrTimeoutDurationFactor as 1000	#define FR_17_ERAY_TIMEOUT_DURATION (1000U)
	Set FrTimeoutDurationFactor as 240000	#define FR_17_ERAY_TIMEOUT_DURATION (240000U)

1.1.16 Macro: Fr_17_ErayConf_FrController_<Name>

Table 16 Fr_17_ErayConf_FrController_<Name>

Name	Fr_17_ErayConf_FrController_<Name>	
Description	Symbolic name definitions for FR controllers.	
Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrController/FrCtrlIdx'. Macro name is generated as Fr_17_ErayConf_FrController_<Name>, <Name > is string configured in parameter 'FrController/Name' for individual controller.	
Example(s)	**Action**	**Generated output**
	• Configure 2 FR controllers (FrController_0, FrController_1). • Set FrController_0/FrCtrlIdx as 0 • Set FrController_1/FrCtrlIdx as 1	#define Fr_17_ErayConf_FrController_FrController_0 (0U) #define Fr_17_ErayConf_FrController_FrController_1 (1U)
	• Configure 1 FR controller (FrController_0). • Set FrController_0/FrCtrlIdx	#define Fr_17_ErayConf_FrController_FrController_0 (0U)

	as 0	

1.1.17 Macro: Fr_17_ErayConf_FrAbsoluteTimer_<Name>

Table 17 Fr_17_ErayConf_FrAbsoluteTimer_<Name>

Name	Fr_17_ErayConf_FrAbsoluteTimer_<Name>	
Description	Symbolic name definitions of absolute timers for FR controller.	
Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrController/FrAbsoluteTimer/FrAbsTimerIdx'. Macro name generated as Fr_17_ErayConf_FrController_<Name>. <Name > is string configured in parameter 'FrController/Name' for individual controller. *Note: The value of parameter FrAbsTimerIdx can be set to 0 only as only one absolute timer is supported by the individual FR controller.*	
Example(s)	**Action**	**Generated output**
	• Configure 2 FR controllers (FrController_0, FrController_1). • Set 'FrController_0/ FrAbsTimerIdx' as 0 and Name as FrController_0 • Set 'FrController_1/ FrAbsTimerIdx' as 0 and Name as FrController_1	#define Fr_17_ErayConf_FrAbsoluteTimer_FrController_0 (0U) #define Fr_17_ErayConf_FrAbsoluteTimer_FrController_1 (0U)
	• Configure 1 FR controller (FrController_0). • Set 'FrController_0/ FrAbsTimerIdx' to 0 • Set Name as FrController_0	#define Fr_17_ErayConf_FrAbsoluteTimer_FrController_0 (0U)

1.1.18 Macro: FR_17_ERAY_CTRL_TEST_COUNT

Table 18 FR_17_ERAY_CTRL_TEST_COUNT

Name	FR_17_ERAY_CTRL_TEST_COUNT
Description	Specifies the maximum number of iterations the FlexRay controller hardware test is performed during controller initialization.

Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrGeneral/FrCtrlTestCount'.	
Example(s)	**Action**	**Generated output**
	Set FrCtrltestCount as 2	#define FR_17_ERAY_CTRL_TEST_COUNT (2U)
	Set FrCtrltestCount as 1	#define FR_17_ERAY_CTRL_TEST_COUNT (1U)

1.1.19 Macro: FR_17_ERAY_NUM_CTRL_SUPPORTED

Table 19 FR_17_ERAY_NUM_CTRL_SUPPORTED

Name	FR_17_ERAY_NUM_CTRL_SUPPORTED	
Description	Specifies the maximum number of communication controllers that the driver supports.	
Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrGeneral/FrNumCtrlSupported'.	
Example(s)	**Action**	**Generated output**
	Set FrNumCtrlSupported as 2	#define FR_17_ERAY_NUM_CTRL_SUPPORTED (2U)
	Set FrNumCtrlSupported as 1	#define FR_17_ERAY_NUM_CTRL_SUPPORTED (1U)

1.1.20 Macro: FR_17_ERAY_RX_STRINGENT_CHECK

Table 20 FR_17_ERAY_RX_STRINGENT_CHECK

Name	FR_17_ERAY_RX_STRINGENT_CHECK	
Description	Enables/disables slot status error detection. If stringent check is enabled (true), received frames are only accepted if slot status error has not occurred.	
Verification method	The macro is generated as STD_ON if 'FrGeneral/FrRxStringentCheck' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrRxStringentCheck as True	#define FR_17_ERAY_RX_STRINGENT_CHECK (STD_ON)
	Set FrRxStringentCheck as False	#define FR_17_ERAY_RX_STRINGENT_CHECK (STD_OFF)

1.1.21 Macro: FR_17_ERAY_RX_STRINGENT_LENGTH_CHECK

Table 21 FR_17_ERAY_RX_STRINGENT_LENGTH_CHECK

Name	FR_17_ERAY_RX_STRINGENT_LENGTH_CHECK

Description	Enables/disables received frame length check. If length check is enabled then received frames are only accepted when the received payload length matches the configured payload length.	
Verification method	The macro is generated as STD_ON if 'FrGeneral/ FrRxStringentLengthCheck' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrRxStringentLengthCheck as True	#define FR_17_ERAY_RX_STRINGENT_LENGTH_CHECK (STD_ON)
	Set FrRxStringentLengthCheck as False	#define FR_17_ERAY_RX_STRINGENT_LENGTH_CHECK (STD_OFF)

1.1.22 Macro: FR_17_ERAY_CLEAR_RAMS_TIMEOUT

Table 22 FR_17_ERAY_CLEAR_RAMS_TIMEOUT

Name	FR_17_ERAY_CLEAR_RAMS_TIMEOUT	
Description	Specifies the timeout duration in nanoseconds until a timeout is raised after initialization of the E-Ray internal RAM blocks. The initialization of the E-Ray internal RAM blocks requires minimum 2048 fCLC_ERAY cycles. 5 percent margin (102 cycles) is added to the value.	
Verification method	The macro is generated as a numeric value which is calculated with formula (2150 * 1000000000)/FrClockCLCERAY. FrClockCLCERAY: (SPBFrequency)/(FrClockDivider) FrClockDivider is value configured in parameter 'Fr/FrClockConfiguration/FrClockDivider'. SPBFrequency is the value configured in the MCU driver for the parameter 'McuClockReferencePointConfig/McuPllDistributionSettingConfig/McuSPBFrequency'	
Example(s)	**Action**	**Generated output**
	• Configure following params for FR controller. • Set FrClockDivider as 1 • Set McuSPBFrequency as 100MHz	#define FR_17_ERAY_CLEAR_RAMS_TIMEOUT (21500U)
	• Configure following params for FR controller.	#define FR_17_ERAY_CLEAR_RAMS_TIMEOUT (43000U)

	• Set FrClockDivider as 2 • Set McuSPBFrequency as 100MHz	

1.1.23 Macro: FR_17_ERAY_POC_BUSY_TIMEOUT

Table 23 FR_17_ERAY_POC_BUSY_TIMEOUT

Name	FR_17_ERAY_POC_BUSY_TIMEOUT	
Description	Specifies the timeout duration in nanoseconds for the POC to exit the busy state during initialization until a timeout is raised. It takes a maximum of 1024 fCLC_ERAY cycles for the POC to exit busy state. 5 percent margin (51 cycles) is added to the value.	
Verification method	The macro is generated as a numeric value which is calculated with formula (1075 * 1000000000)/FrClockCLCERAY. Where: FrClockCLCERAY: (SPBFrequency)/(FrClockDivider) FrClockDivider is value configured in parameter 'Fr/FrClockConfiguration/FrClockDivider'. SPBFrequency is the value configured in the MCU driver for the parameter 'McuClockReferencePointConfig/McuPllDistributionSettingConfig/McuSPBFrequency'	
Example(s)	**Action**	**Generated output**
	• Configure following params for FR controller. • Set FrClockDivider as 1 • Set McuSPBFrequency as 100MHz	#define FR_17_ERAY_CLEAR_RAMS_TIMEOUT (10750U)
	• Configure following params for FR controller. • Set FrClockDivider as 2 • Set McuSPBFrequency as 100MHz	#define FR_17_ERAY_POC_BUSY_TIMEOUT (21500U)

1.1.24 Macro: FR_17_ERAY_MBF_TO_OBF_TRNSF_TIMEOUT

Table 24 FR_17_ERAY_MBF_TO_OBF_TRNSF_TIMEOUT

Name	FR_17_ERAY_MBF_TO_OBF_TRNSF_TIMEOUT

Description	Specifies the worst case timeout duration in nanoseconds for the data transfer from Message Buffer RAM to Output Buffer. It takes a maximum of 435 fCLC_ERAY cycles for this data transfer. 5 percent margin (22 cycles) is added to this value.	
Verification method	The macro is generated as a numeric value which is calculated with formula (457 * 1000000000)/FrClockCLCERAY. Where: FrClockCLCERAY: (SPBFrequency)/(FrClockDivider) FrClockDivider is value configured in parameter 'Fr/FrClockConfiguration/FrClockDivider'. SPBFrequency is the value configured in the MCU driver for the parameter 'McuClockReferencePointConfig/McuPllDistributionSettingConfig/McuSPBFrequency'	
Example(s)	**Action**	**Generated output**
	• Configure following params for FR controller. • Set FrClockDivider as 1 • Set McuSPBFrequency as 100MHz	#define FR_17_ERAY_MBF_TO_OBF_TRNSF_TIMEOUT (4570U)
	• Configure following params for FR controller. • Set FrClockDivider as 2 • Set McuSPBFrequency as 100MHz	#define FR_17_ERAY_MBF_TO_OBF_TRNSF_TIMEOUT (9140U)

1.1.25 Macro: FR_17_ERAY_MSG_BUFF_COUNT_MAX_<x>

Table 25 FR_17_ERAY_MSG_BUFF_COUNT_MAX_<x>

Name	FR_17_ERAY_MSG_BUFF_COUNT_MAX_<x>	
Description	Macro specifies maximum number of message buffers used per controller.	
Verification method	The macro is generated as a numeric value which corresponds to the number of LPdu configured in the 'FrIf/FrIfCluster/FrIfController/FrIfController_<FrCtrlIdx>/FrIfLPdu'. If the number of LPdus configured is greater than 128 then macro value is generated as 128. The macro name is generated as FR_17_ERAY_MSG_BUFF_COUNT_MAX_<FrCtrlIdx>, FrCtrlIdx is FR controller index configured in parameter 'FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**
	• Configure following params	#define FR_17_ERAY_MSG_BUFF_COUNT_MAX_0

	for FR controller in FrIf. • Configure cluster 'FrIfCluster_0' • Configure 2 Fr controllers (FrIfController_0, FrIfController_1). • Configure 9 LPdus for each FR controller (FrIfLPdu_0 to FrIfLPdu_8).	(9U) #define FR_17_ERAY_MSG_BUFF_COUNT_MAX_1 (9U)
	• Configure following params for FR controller in 'FrIf'. • Configure cluster 'FrIfCluster_0' • Configure 1 Fr controller (FrIfController_0). • Configure 129 LPdus for FR controller (FrIfLPdu_0 to FrIfLPdu_128).	#define FR_17_ERAY_MSG_BUFF_COUNT_MAX_0 (128U)

1.1.26 Macro: FR_17_ERAY_CONTROLLER0_CONFIGURED

Table 26 FR_17_ERAY_CONTROLLER0_CONFIGURED

Name	FR_17_ERAY_CONTROLLER0_CONFIGURED	
Description	Indicates whether controller0 is configured or not.	
Verification method	The macro is generated as STD_ON if FR controller 0 is configured in 'Fr/FrController/FrCtrlIdx' else it is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	• Configure following params for FR controller. • Configure cluster 'FrIfCluster_0' • Configure 1 Fr controller in Fr module (FrController_0). • Set FrCtrlIdx as 0	#define FR_17_ERAY_CONTROLLER0_CONFIGURED (STD_ON)
	• Configure following parameters for FR controller. • Configure cluster 'FrIfCluster_0' • Configure 1 Fr controller in	#define FR_17_ERAY_CONTROLLER0_CONFIGURED (STD_OFF)

	Fr module (FrController_0). • Set FrCtrlIdx as 1	

1.1.27 Macro: FR_17_ERAY_CONTROLLER1_CONFIGURED

Table 27 FR_17_ERAY_CONTROLLER1_CONFIGURED

Name	FR_17_ERAY_CONTROLLER1_CONFIGURED	
Description	Indicates whether controller1 is configured or not.	
Verification method	The macro is generated as STD_ON if FR controller 1 is configured in 'Fr/FrController/FrCtrlIdx' else it is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	• Configure following parameters for FR controller. • Configure 1 Fr controller in Fr module (FrController_1). • Set FrCtrlIdx as 1	#define FR_17_ERAY_CONTROLLER1_CONFIGURED (STD_ON)
	• Configure following parameters for FR controller. • Configure 1 Fr controller in Fr module (FrController_1). • Set FrCtrlIdx as 0	#define FR_17_ERAY_CONTROLLER1_CONFIGURED (STD_OFF)

1.1.28 Macro: FR_17_ERAY_NUM_CONTROLLERS_IN_DEVICE

Table 28 FR_17_ERAY_NUM_CONTROLLERS_IN_DEVICE

Name	FR_17_ERAY_NUM_CONTROLLERS_IN_DEVICE	
Description	Specifies number of ERAY Controllers available in the device. *Note: This macro is not configurable by the user.*	
Verification method	The macro is generated as a numeric value that specifies the number of ERAY controllers available in the device.	
Example(s)	**Action**	**Generated output**
	Generate Fr_17_Eray_Cfg.h	/* Number of ERAY Controllers available in the device */ #define

		FR_17_ERAY_NUM_CONTROLLERS_IN_DEVICE (2U)

1.1.29 Macro: FR_17_ERAY_FIFO_CONFIGURED

Table 29 FR_17_ERAY_FIFO_CONFIGURED

Name	FR_17_ERAY_FIFO_CONFIGURED	
Description	Specifies whether FIFO is configured or not.	
Verification method	The macro is generated as a STD_ON if FIFO is configured in container 'FrController/FrFifo/*' else it is generated as a STD_OFF.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FrController (FrController_0) • Configure 1 FIFO for FrController_0 (FrFifo_0).	#define FR_17_ERAY_FIFO_CONFIGURED (STD_ON)
	• Configure 2 FrControllers (FrController_0, FrController_2) • Don't configure FIFO for both controllers.	#define FR_17_ERAY_FIFO_CONFIGURED (STD_OFF)

1.1.30 Macro: FR_17_ERAY_INSTANCE_ID

Table 30 FR_17_ERAY_INSTANCE_ID

Name	FR_17_ERAY_INSTANCE_ID	
Description	Instance ID of FR module.	
Verification method	The macro is generated as a numeric value set in the configuration parameter 'FrGeneral/FrIndex'	
Example(s)	**Action**	**Generated output**
	Set FrIndex as 0	#define FR_17_ERAY_INSTANCE_ID (0U)
	Set FrIndex as 240	#define FR_17_ERAY_INSTANCE_ID (240U)

1.1.31 Macro: FR_17_ERAY_TX_CONFLICT_DETECTION

Table 31 FR_17_ERAY_TX_CONFLICT_DETECTION

Name	FR_17_ERAY_TX_CONFLICT_DETECTION
Description	Enables/ disables the detection of the transmission conflict occurrence by the Fr_17_Eray_CheckTxLPduStatus API.

Verification method	The macro is generated as STD_ON if 'FrTxConflictDetection' configuration parameter is set to 'True' else the macro is generated as STD_OFF.	
Example(s)	**Action**	**Generated output**
	Set FrTxConflictDetection as True	#define FR_17_ERAY_TX_CONFLICT_DETECTION (STD_ON)
	Set FrTxConflictDetection as False	#define FR_17_ERAY_TX_CONFLICT_DETECTION (STD_OFF)

1.1.32 Macro: FR_17_ERAY_RUNTIME_ERROR_DETECT

Table 32 FR_17_ERAY_RUNTIME_ERROR_DETECT

Name	FR_17_ERAY_RUNTIME_ERROR_DETECT	
Description	Enables/disables the Runtime Error Detection.	
Verification method	The macro is generated as STD_ON if 'FrRunTimeErrorDetect' configuration parameter is set to 'True' else the macro is generated as STD_OFF. This MACRO is applicable only for AUTOSAR 4.4.0 version.	
Example(s)	**Action**	**Generated output**
	Set FrRunTimeErrorDetect as True	#define FR_17_ERAY_RUNTIME_ERROR_DETECT (STD_ON)
	Set FrRunTimeErrorDetect as False	#define FR_17_ERAY_RUNTIME_ERROR_DETECT (STD_OFF)

1.1.33 Macro: FR_17_ERAY_EXTENDED_LPDU_REPORTING

Table 33 FR_17_ERAY_EXTENDED_LPDU_REPORTING

Name	FR_17_ERAY_EXTENDED_LPDU_REPORTING	
Description	Enables/disables the Extended LPdu Reporting.	
Verification method	The macro is generated as STD_ON if 'FrExtendedLPduReporting' configuration parameter is set to 'True' else the macro is generated as STD_OFF. This MACRO is applicable only for AUTOSAR 4.4.0 version.	
Example(s)	**Action**	**Generated output**
	Set FrExtendedLPduReporting as True	#define FR_17_ERAY_EXTENDED_LPDU_REPORTING (STD_ON)
	Set FrExtendedLPduReporting as False	#define FR_17_ERAY_EXTENDED_LPDU_REPORTING (STD_OFF)

1.2 File: Fr_17_Eray[_<variant>]_PBcfg.c

The generated source file contains all post-build configuration parameters. Post-build time configuration mechanism allows configurable functionality of FR driver that is deployed as object code. The file is generated in 'src' folder.

1.2.1 Structure: Fr_17_Eray_Config[_<variant>]

Table 34 Fr_17_Eray_Config[_<variant>]

Name	Fr_17_Eray_Config[_<variant>]	
Type	Fr_17_Eray_ConfigType	
Description	Root configuration structure of FR driver which will be used during initialization.	
Verification method	The generated structure is present in Fr_17_Eray[_<variant>]_PBcfg.c file. The <variant> indicates the name of the post-build variant. For a variant-aware configuration the structure name is appended with the variant name. For variant-unaware configuration <variant> is ignored.	
Example(s)	**Action**	**Generated output**

	• Configure 2 FR controllers
	• Set FrMultipleConfiguration/Name to 'FrMultipleConfiguration' (variant-unaware)
		const Fr_17_Eray_ConfigType Fr_17_Eray_Config =
		{
		&Fr_17_Eray_FrMultipleConfiguration_CC[0],
		&Fr_17_Eray_FrMultipleConfiguration_CCMap[0]
		};

	• Configure 2 FR controllers
	• Set FrMultipleConfiguration/Name to 'FrMultipleConfiguration'
	(variant-aware. Variant name is 'Petrol')
		const Fr_17_Eray_ConfigType Fr_17_Eray_Config_Petrol =
		{
		&Fr_17_Eray_FrMultipleConfiguration_CC[0],
		&Fr_17_Eray_FrMultipleConfiguration_CCMap[0]
		};

	• Configure 1 FR controller with FrCtrlIdx to 0
	• Set FrMultipleConfiguration/Name as 'FrMultipleConfiguration_0'
	(variant-unaware)
		const Fr_17_Eray_ConfigType Fr_17_Eray_Config =
		{
		&Fr_17_Eray_FrMultipleConfiguration_0_CC[0],
		&Fr_17_Eray_FrMultipleConfiguration_0_CCMap[0]
		};

1.2.1.1 Member: CfgPtr

Table 35 CfgPtr

Name	CfgPtr	
Type	Fr_17_Eray_CCType *	
Description	Pointer to the data structure containing the initialization data for the individual FlexRay controller.	
Verification method	The generated structure member is present in the Fr_17_Eray_Config[_<variant>] structure. Address is generated as &Fr_17_Eray_< ConfigShortName>_CC[0]. <ConfigShortName> is string configured in parameter 'FrMultipleConfiguration/Name'.	
Example(s)	**Action**	**Generated output**
	• Configure 2 (Number of FR controller available in device) FR controllers • Set Name as 'FrMultipleConfiguration'	&Fr_17_Eray_FrMultipleConfiguration_CC[0]
	• Configure 2 (Number of FR controller available in device) FR controllers • Set Name as 'MyConfig'	&Fr_17_Eray_MyConfig_CC[0]
	• Configure 1 FR controller with FrCtrlIdx to 0 • Set Name as 'FrMultipleConfiguration_0'	&Fr_17_Eray_FrMultipleConfiguration_0_CC[0]

1.2.1.2 Member: Phy2LogIdxPtr

Table 36 Phy2LogIdxPtr

Name	Phy2LogIdxPtr
Type	uint8 *
Description	Pointer to Physical to Logical Indexing map array.
Verification method	The generated structure member is present in the Fr_17_Eray_Config[_<variant>] structure. Address is generated as &Fr_17_Eray_< ConfigShortName >_CCMap[0]. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'.

Example(s)	Action	Generated output
	• Configure 2 (Number of FR controller available in device) FR controllers • Set Name as 'FrMultipleConfiguration'	&Fr_17_Eray_FrMultipleConfiguration_CCMap[0]
	• Configure 2 (Number of FR controller available in device) FR controllers • Set Name as 'MyConfig'	&Fr_17_Eray_MyConfig_CCMap[0]
	• Configure 1 FR controller with FrCtrlIdx set to 0 • Set Name as 'FrMultipleConfiguration_0'	&Fr_17_Eray_FrMultipleConfiguration_0_CCMap[0]

1.2.2 Structure: Fr_17_Eray_< ConfigShortName >_CCMap

Table 37 Fr_17_Eray_< ConfigShortName >_CCMap

Name	Fr_17_Eray_< ConfigShortName >_CCMap	
Type	uint8	
Description	Array which contains the mapping of physical to logical index	
Verification method	The generated file has this array. Array name is generated as 'Fr_17_Eray_<ConfigShortName>_CCMap', size of array is depends on number of FR controllers supported by device. < ConfigShortName> is string configured in parameter 'FrMultipleConfiguration/Name'. If FR controller is not configured then logical index is generated as 255 (not configured) else it is generated as logical index configured.	
Example(s)	**Action**	**Generated output**
	• Configure 2(Number of FR controller available in device) Controllers. (FrController_0, FrController_1)	static const uint8 Fr_17_Eray_FrMultipleConfiguration_CCMap[FR_17_ERAY_NUM_CONTROLLERS_IN_DEVICE] = { 0U, 1U

	• Configure FrController_0/FrCtrlIdx as 0 • Configure FrController_1/FrCtrlIdx as 1 • Set Name as 'FrMultipleConfiguration'	};

	• Configure 1 Controller. (FrController_0)
	• Configure FrController_0/FrCtrlIdx as 1
	• Set Name as 'FrMultipleConfiguration_0'
		static const uint8 Fr_17_Eray_FrMultipleConfiguration_0_CCMap[FR_17_ERAY_NUM_CONTROLLERS_IN_DEVICE] =
		{
		255U,
		0U
		};

1.2.3 Structure: Fr_17_Eray_< ConfigShortName >_CC

Table 38 Fr_17_Eray_< ConfigShortName >_CC

Name	Fr_17_Eray_< ConfigShortName >_CC	
Type	Fr_17_Eray_CCType	
Description	Array of FlexRay data structure which contains configuration of individual communication controller.	
Verification method	The generated file has array as Fr_17_Eray_< ConfigShortName >_CC which contains configuration of individual FR controller. Number of array members depends on number of FR controllers configured under 'FrController/'. <ConfigShortName> is string configured in parameter 'FrMultipleConfiguration/Name'	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller with 2 LPdus and Set	static const Fr_17_Eray_CCType Fr_17_Eray_FrMultipleConfiguration_CC[] = { {

FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration	/* Pointer to configuration of Communication Controller */ &Fr_17_Eray_FrMultipleConfiguration_kCCCfg_0, /* Pointer to array of LPDU configurations */ Fr_17_Eray_FrMultipleConfiguration_kLPduConfig_0, #if (FR_17_ERAY_FIFO_CONFIGURED == STD_ON) &Fr_17_Eray_FrMultipleConfiguration_RxFifoConfig_0, #endif /* Pointer to array of FR parameters accessed by Fr_ReadCCConfig */ Fr_17_Eray_FrMultipleConfiguration_CCConfigArray_0, /* Pointer to LPDU to message buffer mapping array */ Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_0, /* Pointer to Data pointer offsets */ Fr_17_Eray_FrMultipleConfiguration_DataPointerOffset_0, /* Number of LPDUs configured */ 2U, /* ERAY Module clock configuration : Runtime Mode Control setting */ 1U, /* Buffer Reconfiguration Status */ 0U, /*DEM Id for FlexRay controller hardware test failure.*/ FR_17_ERAY_DEM_REPORT_DISABLED, /* Number of HW message buffers required */ 2U

	} };
• Configure 2 FR controllers. (FrController_0, FrController_1) • Configure FrController_0/FrCtrlIdx as 0 and FrController_1/FrCtrlIdx as 1. • Set Name as FrMultipleConfiguration	static const Fr_17_Eray_CCType Fr_17_Eray_FrMultipleConfiguration_CC[] = { { /* Pointer to configuration of Communication Controller */ &Fr_17_Eray_FrMultipleConfiguration_kCCCfg_0, /* Pointer to array of LPDU configurations */ Fr_17_Eray_FrMultipleConfiguration_kLPduConfig_0, #if (FR_17_ERAY_FIFO_CONFIGURED == STD_ON) NULL_PTR, #endif /* Pointer to array of FR parameters accessed by Fr_ReadCCConfig */ Fr_17_Eray_FrMultipleConfiguration_CCConfigArray_0, /* Pointer to LPDU to message buffer mapping array */ Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_0, /* Pointer to Data pointer offsets */ Fr_17_Eray_FrMultipleConfiguration_DataPointerOffset_0, /* Number of LPDUs configured */ 2U, /* ERAY Module clock configuration : Runtime Mode Control setting */ 1U, /* Buffer Reconfiguration Status */ 0U,

```
  /*DEM Id for FlexRay controller hardware test failure.*/
  FR_17_ERAY_DEM_REPORT_DISABLED,

  /* Number of HW message buffers required */
  2U
},
{
  /* Pointer to configuration of Communication Controller */
  &Fr_17_Eray_FrMultipleConfiguration_kCCCfg_1,

  /* Pointer to array of LPDU configurations */
  Fr_17_Eray_FrMultipleConfiguration_kLPduConfig_1,

  #if (FR_17_ERAY_FIFO_CONFIGURED == STD_ON)
  NULL_PTR,
  #endif

  /* Pointer to array of FR parameters accessed by Fr_ReadCCConfig */
  Fr_17_Eray_FrMultipleConfiguration_CCConfigArray_1,

  /* Pointer to LPDU to message buffer mapping array */
  Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_1,

  /* Pointer to Data pointer offsets */
  Fr_17_Eray_FrMultipleConfiguration_DataPointerOffset_1,

  /* Number of LPDUs configured */
  2U,

  /* ERAY Module clock configuration : Runtime Mode Control setting */
  1U,
```

		/* Buffer Reconfiguration Status */
		0U,
		
		/*DEM Id for FlexRay controller hardware test failure.*/
		DemConf_DemEventParameter_Fr_17_ErayCtrlTestResult_Ctrl0,
		
		/* Number of HW message buffers required */
		2U
		}
		};

1.2.3.1 Member: CCCfgPtr

Table 39 CCCfgPtr

Name	CCCfgPtr	
Type	Fr_17_Eray_CCConfigType *	
Description	Pointer to configuration of Communication Controller.	
Verification method	The structure member is generated as &Fr_17_Eray_<ConfigShortName>_kCCCfg_<FrCtrlIdx>. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name' <FrCtrlIdx> is FR index configured in parameter 'FrController/FrCtrlIdx' for individual FR controller.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration	/* Pointer to configuration of Communication Controller */ &Fr_17_Eray_FrMultipleConfiguration_kCCCfg_0,
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 1 • Set Name as MyConfig	/* Pointer to configuration of Communication Controller */ &Fr_17_Eray_MyConfig_kCCCfg_1,

1.2.3.2 Member: LPduConfigPtr

Table 40 LPduConfigPtr

Name	LPduConfigPtr	
Type	Fr_17_Eray_LPduConfigType *	
Description	Pointer to array of LPdu configurations	
Verification method	The structure member is the generated address of the array which contains the LPdu configurations, structure member is generated as Fr_17_Eray_< ConfigShortName>_kLPduConfig_<FrCtrlIdx>. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration	/* Pointer to array of LPDU configurations */ Fr_17_Eray_FrMultipleConfiguration_kLPduConfig_0,
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 1 • Set Name as MyConfig	/* Pointer to array of LPDU configurations */ Fr_17_Eray_MyConfig_kLPduConfig_1,

1.2.3.3 Member: RxFifoConfigPtr

Table 41 RxFifoConfigPtr

Name	RxFifoConfigPtr
Type	Fr_17_Eray_RxFifoConfigType *
Description	Pointer to array of Receive FIFO configuration.
Verification method	The structure member is generated FIFO configuration array address for individual FR controller, Structure member is generated as Fr_17_Eray_< ConfigShortName >_ RxFifoConfig_< FrCtrlIdx>. If FIFO is not configured in 'FrController/FrFifo' for FR controller then member is generated as a NULL_PTR.

	< ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrController_0). • Configure FIFO for FR controller (FrFifo_0) • Set FrCtrlIdx as 1 • Set Name as MyConfig	#if (FR_17_ERAY_FIFO_CONFIGURED == STD_ON) &Fr_17_Eray_MyConfig_RxFifoConfig_1, #endif
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 1 • Set Name as MyConfig • Do not configure FIFO.	#if (FR_17_ERAY_FIFO_CONFIGURED == STD_ON) NULL_PTR, #endif

1.2.3.4 Member: ConfigParamPtr

Table 42 ConfigParamPtr

Name	ConfigParamPtr	
Type	uint32 *	
Description	Pointer to array of FlexRay protocol configuration parameters for a particular FlexRay controller.	
Verification method	The structure member is generated as pointer to protocol configuration for individual FR controller, Structure member is generated as Fr_17_Eray_< ConfigShortName>_CCConfigArray_< FrCtrlIdx>. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration	/* Pointer to array of FR parameters accessed by Fr_ReadCCConfig */ Fr_17_Eray_FrMultipleConfiguration_CCConfigArray_0,

1.2.3.5 Member: LPduIdx2MsgBuffIdxPtr

Table 43 LPduIdx2MsgBuffIdxPtr

Name	LPduIdx2MsgBuffIdxPtr
Type	uint8 *
Description	Pointer to LPdu to message buffer mapping array.
Verification method	The structure member is generated as pointer to LPdu to message buffer mapping array for individual FR controller, Structure member generated as Fr_17_Eray_< ConfigShortName>_LPduIdx2MsgBuff_< FrCtrlIdx>. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.

Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration	/* Pointer to LPDU to message buffer mapping array */ Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_0,

1.2.3.6 Member: DataPointerOffsetPtr

Table 44 DataPointerOffsetPtr

Name	DataPointerOffsetPtr
Type	uint16 *
Description	Pointer to array of data offsets of message buffers.
Verification method	The structure member is generated as pointer to array which contain mapping of data offset configuration for individual FR controller, Structure member generated as Fr_17_Eray_< ConfigShortName >_LPduIdx2MsgBuff_< FrCtrlIdx>. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.

Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrController_0). • Set FrCtrlIdx as 0 • Set Name as FrMultipleConfigurat	/* Pointer to LPDU to message buffer mapping array */ Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_0,

	ion	

1.2.3.7 Member: LPduCount

Table 45 LPduCount

Name	LPduCount	
Type	uint16	
Description	Number of LPdus configured for individual FR controller.	
Verification method	The structure member is generated as numeric value. Value is generated as number of LPdus configured in 'FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfLPdu/*' for individual controller.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller in 'FrIf' module under FrIfController container. (FrController_0). • Set FrIfCtrlIdx as 0 • Configure 9 LPdus for FrController_0. • Set FrIfFrCtrlRef as /Fr/Fr/MyConfig/FrController_0	/* Number of LPDUs configured */ 9U,

1.2.3.8 Member: FrClockDivider

Table 46 FrClockDivider

Name	FrClockDivider	
Type	uint8	
Description	ERAY System Clock Divider.	
Verification method	The structure member is generated as a numeric value which is configured in 'FrMultipleConfiguration/FrClockDivider'.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller in 'Fr' module. (FrController_0). • Set FrClockDivider as 1	/* ERAY Module clock configuration : Runtime Mode Control setting */ 1U,
	• Configure 1 FR controller in 'Fr' module.	/* ERAY Module clock configuration : Runtime Mode Control setting */ 3U,

	(FrController_0). • Set FrClockDivider as 3	

1.2.3.9 Member: FrIsBuffReconfigOn

Table 47 FrIsBuffReconfigOn

Name	FrIsBuffReconfigOn	
Type	uint8	
Description	Flag to indicate whether the Buffer reconfiguration is enabled for individual FR controller.	
Verification method	The structure member is generated as numeric value. If number of LPdus configured for FR controller is greater than 128 or If all the configured LPdus do not fit within the message RAM (8k) of the FR controller, then value is generated as 1 else 0 is generated.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller in 'Fr' module. (FrController_0). • Configure 2 LPdus each with FrIfLSduLength as 4	/* Buffer Reconfiguration Status */ 0U,
	• Configure 1 FR controller in 'Fr' module. (FrController_0). • Configure 130 LPdus (FrIfLPdu_0 to FrIfLPdu_129)	/* Buffer Reconfiguration Status */ 1U,

1.2.3.10 Member: FrDemCtrlTestResultId

Table 48 FrDemCtrlTestResultId

Name	FrDemCtrlTestResultId
Type	Dem_EventIdType
Description	DEM Id for FlexRay controller hardware test failure.
Verification method	The structure member is generated as FR_17_ERAY_DEM_REPORT_DISABLED when DEM event is not configured in FrController/FrControllerDemEventParameterRefs/*[1]/FR_E_CTRL_TESTRESULT/*[1]. If DEM event is configured in container

	'FrController/FrControllerDemEventParameterRefs/*[1]/FR_E_CTRL_TESTRESULT/*[1]' then member is generated as DemConf_DemEventParameter_< FrControllerDemEventParameterRefs/*[1]/FR_E_CTRL_TESTRESULT/*[1]>	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller in 'Fr' module. (FrController_0). • FR_E_CTRL_TESTRESULT/* = Fr_17_ErayCtrlTestResult_Ctrl0	/*DEM Id for FlexRay controller hardware test failure.*/ DemConf_DemEventParameter_Fr_17_ErayCtrlTestResult_Ctrl0,
	• Configure 1 FR controller in 'Fr' module. (FrController_0). • DEM is not configured	/*DEM Id for FlexRay controller hardware test failure.*/ FR_17_ERAY_DEM_REPORT_DISABLED,

1.2.3.11 Member: MsgBuffCountMax

Table 49 MsgBuffCountMax

Name	MsgBuffCountMax	
Type	uint8	
Description	Number of Message buffers configured.	
Verification method	The structure member is generated as a numeric value which corresponds to the number of elements in the list 'FrIf/FrIfCluster/ FrIfController/FrIfLPdu/*' for individual FR controller when message buffer reconfiguration is disabled. If message buffer reconfiguration is enabled, then the structure member is generated as a numeric value which corresponds to the actual number of hardware message buffers used within the individual FR controller.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller. (FrController_0). • Configure 9 LPdus (FrIfLPdu_0 to FrIfLPdu_8)	/* Number of HW message buffers required */ 9U
	• Configure 1 FR controller. (FrController_0). • Configure 130 LPdus.	/* Number of HW message buffers required */ 128U

(FrIfLPdu_0 to FrIfLPdu_129)	

1.2.4 Structure: Fr_17_Eray_< ConfigShortName >_kCCCfg_<FrIfCtrlIdx >

Table 50 Fr_17_Eray_< ConfigShortName >_kCCCfg_<FrIfCtrlIdx>

Name	Fr_17_Eray_< ConfigShortName >_kCCCfg_<FrIfCtrlIdx>	
Type	Fr_17_Eray_CCConfigType	
Description	Structure containing configuration parameters for a FlexRay communication controller.	
Verification method	The structure is generated as Fr_17_Eray_<ConfigShortName>_kCCCfg_<FrIfCtrlIdx>. < ConfigShortName> is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller • Set Name as MyConfig • Set FrCtrlIdx as 0	static const Fr_17_Eray_CCConfigType Fr_17_Eray_MyConfig_kCCCfg_0 = { /* SUCC1 register configuration */ /* 0U - CmdPOCBusy (Unused member) 1U - pKeySlotUsedForStartup 1U - pKeySlotUsedForSync 0U - Reserved bit 0x1fU - FrIfGColdStartAttempts 7U - FrPAllowPassiveToActive 0U - FrPWakeupChannel 0U - FrPKeySlotOnlyEnabled in FlexRay Protocol 2.1 Rev. A 1U - FrPAllowHaltDueToClock 0U - pChannelsMTS (Unused), 0 means no channels selected 3U - FrPChannels, add 0x1 as the hw regs take ChannelA = 1, ChannelB = 2 and ChannelAB = 3 */ 0x0c87fb00U, /* SUCC2 register settings */ /*

		0x13972U - FrPdListenTimeout 0xfU - (FrIfGListenNoise - 1) */ 0x0f013972U, /* SUCC3 register settings */ /* 0x1U - FrIfGMaxWithoutClockCorrectPassive 0x1U - FrIfGMaxWithoutClockCorrectFatal */ 0x00000011U, /* NEMC register settings */ /* 0x2U - FrIfGNetworkManagementVectorLength */ 0x00000002U, /* PRTC1 register settings */ /* 0xaU - FrIfGdTSSTransmitter 0x61U - FrIfGdCasRxLowMax 0U - Strobe Point Position. Always zero (default) 0U - BRP. Always zero as driver supports only 10Mbps rate 0x4cU - FrIfgdWakeupRxWindow 0x2U - FrPWakeupPattern */ 0x084c061aU, /* PRTC2 register settings */ /* 0x12U - FrIfgdWakeupRxIdle 0x12U - FrIfgdWakeupRxLow 0xb4U - FrIfGdWakeupTxIdle 0x3cU - FrIfGdWakeupTxActive */ 0x3cb41212U,

		/* MHDC register settings */ /* 0x4U - FrIfGPayloadLengthStatic 0x3fU - FrPLatestTx */ 0x003f0004U, /* GTUC01 register settings */ /* 0x9c40U - UT: FrPMicroPerCycle */ 0x00009c40U, /* GTUC02 register settings */ /* 0x3e8U - FrIfGMacroPerCycle 0x4U - FrIfGSyncFrameIDCountMax maps to FrIfGSyncNodeMax FR Pr 2.1 */ 0x000403e8U, /* GTUC03 register settings */ /* 0x18U - FrPMicroInitialOffsetA [A] 0x18U - FrPMicroInitialOffsetB [B] 0xaU - FrPMacroInitialOffsetA [A] 0xaU - FrPMacroInitialOffsetB [B] */ 0x0a0a1818U, /* GTUC04 register settings */ /* 0x38eU - NetworkIdleTimeStart = (FrIfGMacroPerCycle - FrIfGdNit - 1) 0x393U - Range: 8 -15998, maps to (FrPOffsetCorrectionStart - 1) */ 0x0393038eU,

		/* GTUC05 register settings */ /* 0x4U - FrPDelayCompensationA 0x4U - FrPDelayCompensationB 0x1U - FrPClusterDriftDamping 0x34U - FrPDecodingCorrection */ 0x34010404U, /* GTUC06 register settings */ /* 0x81U - FrPdAcceptedStartupRange 0xd2U - is same as FrPdMaxDrift */ 0x00d20081U, /* GTUC07 register settings */ /* 0x32U - FrIfGdStaticSlot 0xc - FrIfGNumberOfStaticSlots */ 0x000c0032U, /* GTUC08 register settings */ /* 0x4U - FrIfGdMinislot 0x4bU - FrIfGNumberOfMinislots */ 0x004b0004U, /* GTUC09 register settings */ /* 0x8U - FrIfgdActionPointOffset 0x3U - FrIfgdMinislotActionPointOffset 0x1U - FrIfgdDynamicSlotIdlePhase */ 0x00010308U,

		/* GTUC10 register settings */ /* 0x32U - FrPOffsetCorrectionOut 0xd2U - FrPRateCorrectionOut */ 0x00d20032U, /* GTUC11 register settings */ /* 0x0000U - Unused (FrPExternOffsetControl, FrPExternRateControl 0U - FrPExternOffsetCorrection is not present in AS40 0U - FrPExternRateCorrection is not present in AS40 */ 0x00000000U, /* CUST1 register settings */ /* 0x00U - Unused 0x00U - Reserved FR_RXSEL0 - FrRxInputSelection Channel A FR_RXSEL0 - FrRxInputSelection Channel B 0x00U - Unused */ 0x00000000U };

1.2.4.1 Member: Succ1CfgVal

Table 51 Succ1CfgVal

Name	Succ1CfgVal
Type	uint32
Description	Configuration value for register SUCC1.
Verification method	The structure member is generated as numeric value aligned to members of SUCC1 register based on value of the configuration parameters FrIfSlotId, FrIfBaseCycle,

	FrIfCycleRepetition, FrIfChannel and FrIfPayloadPreamble.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters in FrIfCluster_0 and FrController_0: • Set FrPKeySlotUsedForStartup as True • Set FrPKeySlotUsedForSync as True • Set FrIfGColdStartAttempts as 31 • Set FrPAllowPassiveToActive as 7 • Set FrPWakeupChannel as FR_CHANNEL_A • Set FrPKeySlotOnlyEnabled as False • Set FrPAllowHaltDueToClock as True • Set FrPChannels as FR_CHANNEL_AB	/* SUCC1 register configuration */ /* 0U - CmdPOCBusy (Unused member) 1U - pKeySlotUsedForStartup 1U - pKeySlotUsedForSync 0U - Reserved bit 0x1fU - FrIfGColdStartAttempts 7U - FrPAllowPassiveToActive 0U - FrPWakeupChannel 0U - FrPKeySlotOnlyEnabled in FlexRay Protocol 2.1 Rev. A 1U - FrPAllowHaltDueToClock 0U - pChannelsMTS (Unused), 0 means no channels selected 3U - FrPChannels, add 0x1 as the hw regs take ChannelA = 1, ChannelB = 2 and ChannelAB = 3 */ 0x0c87fb00U,

1.2.4.2 Member: Succ2CfgVal

Table 52 Succ2CfgVal

Name	Succ2CfgVal
Type	uint32
Description	Configuration value for register SUCC2.
Verification method	The structure member is generated as numeric value aligned to members of SUCC2 register based on value of the configuration parameters FrPdListenTimeout and FrIfGListenNoise.

Example(s)	Action	Generated output
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters in FrIfCluster_0 and FrController_0: • Set FrPdListenTimeout as 80242 • Set FrIfGListenNoise as 16	/* SUCC2 register settings */ /* 0x13972U - FrPdListenTimeout 0xfU - (FrIfGListenNoise - 1) */ 0x0f013972U,

1.2.4.3 Member: Succ3CfgVal

Table 53 Succ3CfgVal

Name	Succ3CfgVal	
Type	uint32	
Description	Configuration value for register SUCC3.	
Verification method	The structure member is generated as numeric value aligned to members of SUCC3 register based on value of the configuration parameters FrIfGMaxWithoutClockCorrectPassive, FrIfGMaxWithoutClockCorrectFatal.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters in FrIfCluster_0 and FrController_0: • Set FrIfGMaxWithoutClockCorrectPassive as 1 • Set FrIfGMaxWithoutClockCorrectFatal as 1	/* SUCC3 register settings */ /* 0x1U - FrIfGMaxWithoutClockCorrectPassive 0x1U - FrIfGMaxWithoutClockCorrectFatal */ 0x00000011U,

1.2.4.4 Member: NemcCfgVal

Table 54 NemcCfgVal

Name	NemcCfgVal
Type	uint32
Description	Configuration value for register NEMC.
Verification	The structure member is generated as numeric value aligned to members of NEMC register

method	based on value of the configuration parameters FrIfGNetworkManagementVectorLength.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters in FrIfCluster_0 and FrController_0: • Set FrIfGNetworkManagementVectorLength as 2	/* NEMC register settings */ /* 0x2U - FrIfGNetworkManagementVectorLength */ 0x00000002U,

1.2.4.5 Member: Prtc1CfgVal

Table 55 Prtc1CfgVal

Name	Prtc1CfgVal	
Type	uint32	
Description	Configuration value for register PRTC1.	
Verification method	The structure member is generated as numeric value aligned to members of PRTC1 register based on value of the configuration parameters FrIfGdTSSTransmitter, FrIfGdCasRxLowMax, FrIfgdWakeupRxWindow and FrPWakeupPattern.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters in FrIfCluster_0 and FrController_0: • Set FrIfGdTSSTransmitter as 10 • Set FrIfGdCasRxLowMax as 97 • Set FrIfgdWakeupRxWindow as 76 • Set FrPWakeupPattern as 2	/* PRTC1 register settings */ /* 0xaU - FrIfGdTSSTransmitter 0x61U - FrIfGdCasRxLowMax 0U - Strobe Point Position. Always zero (default) 0U - BRP. Always zero as driver supports only 10Mbps rate 0x4cU - FrIfgdWakeupRxWindow 0x2U - FrPWakeupPattern */ 0x084c061aU,

1.2.4.6 Member: Prtc2CfgVal

Table 56 Prtc2CfgVal

Name	Prtc2CfgVal	
Type	uint32	
Description	Configuration value for register PRTC2.	
Verification method	The structure member is generated as numeric value aligned to members of PRTC2 register based on value of the configuration parameters FrIfgdWakeupRxIdle, FrIfGdWakeupRxLow, FrIfGdWakeupTxIdle and FrIfGdWakeupTxActive.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters in FrIfCluster_0 and FrController_0: • Set FrIfgdWakeupRxIdle as 18 • Set FrIfGdWakeupRxLow as 18 • Set FrIfGdWakeupTxIdle as 180 • Set FrIfGdWakeupTxActive as 60	/* PRTC2 register settings */ /* 0x12U - FrIfgdWakeupRxIdle 0x12U - FrIfgdWakeupRxLow 0xb4U - FrIfGdWakeupTxIdle 0x3cU - FrIfGdWakeupTxActive */ 0x3cb41212U,

1.2.4.7 Member: MHDC

Table 57 MHDC

Name	MHDC	
Type	uint32	
Description	Configuration value for register MHDC.	
Verification method	The structure member is generated as numeric value aligned to members of MHDC register based on value of the configuration parameters FrIfGPayloadLengthStatic and FrPLatestTx.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0,	/* MHDC register settings */ /*

	FrIfCluster_0) • Configure following parameters: • Set FrIfGPayloadLengthStatic as 4 • Set FrPLatestTx as 63	0x4U - FrIfGPayloadLengthStatic 0x3fU - FrPLatestTx */ 0x003f0004U,

1.2.4.8 Member: GTUC01

Table 58 GTUC01

Name	GTUC01	
Type	uint32	
Description	Configuration value for register GTUC01.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC01 register based on value of the configuration parameter FrPMicroPerCycle.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0) • Configure following parameters: • Set FrPMicroPerCycle as 40000	/* GTUC01 register settings */ /* 0x9c40U - UT: FrPMicroPerCycle */ 0x00009c40U,

1.2.4.9 Member: GTUC02

Table 59 GTUC02

Name	GTUC02	
Type	uint32	
Description	Configuration value for register GTUC02.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC02 register based on value of the configuration parameters FrIfGMacroPerCycle and FrIfGSyncFrameIDCountMax.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrIfGMacroPerCycle as	/* GTUC02 register settings */ /* 0x3e8U - FrIfGMacroPerCycle 0x4U - FrIfGSyncFrameIDCountMax maps to FrIfGSyncNodeMax FR Pr 2.1

	1000 • Set FrIfGSyncFrameIDCountMax as 4	*/ 0x000403e8U,

1.2.4.10 Member: GTUC03

Table 60 GTUC03

Name	GTUC03	
Type	uint32	
Description	Configuration value for register GTUC03.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC03 register based on value of the configuration parameters FrPMicroInitialOffsetA, FrPMicroInitialOffsetB, FrPMacroInitialOffsetA and FrPMacroInitialOffsetB from.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrPMicroInitialOffsetA as 24 • Set FrPMicroInitialOffsetB as 24 • Set FrPMacroInitialOffsetA as 10 • Set FrPMacroInitialOffsetB as 10	/* GTUC03 register settings */ /* 0x18U - FrPMicroInitialOffsetA [A] 0x18U - FrPMicroInitialOffsetB [B] 0xaU - FrPMacroInitialOffsetA [A] 0xaU - FrPMacroInitialOffsetB [B] */ 0x0a0a1818U,

1.2.4.11 Member: GTUC04

Table 61 GTUC04

Name	GTUC04
Type	uint32
Description	Configuration value for register GTUC04.
Verification method	The structure member is generated as numeric value aligned to members of GTUC04 register based on value of the configuration parameters FrIfGMacroPerCycle, FrIfGdNit and FrPOffsetCorrectionStart.

	NIT (Network idle time) = (FrIfGMacroPerCycle - FrIfGdNit - 1) OCS (Offset correction start) = (FrPOffsetCorrectionStart - 1)	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrIfGMacroPerCycle as 1000 • Set FrIfGdNit as 89 • Set FrPOffsetCorrectionStart as 916	/* GTUC04 register settings */ /* 0x38eU - NetworkIdleTimeStart = (FrIfGMacroPerCycle - FrIfGdNit - 1) 0x393U - Range: 8 -15998, maps to (FrPOffsetCorrectionStart - 1) */ 0x0393038eU,

1.2.4.12 Member: GTUC05

Table 62 GTUC05

Name	GTUC05	
Type	uint32	
Description	Configuration value for register GTUC05.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC05 register based on value of the configuration parameters FrPDelayCompensationA, FrPDelayCompensationB, FrPClusterDriftDamping and FrPDecodingCorrection.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrPDelayCompensationA as 4 • Set FrPDelayCompensationB as 4 • Set FrPClusterDriftDamping as	/* GTUC05 register settings */ /* 0x4U - FrPDelayCompensationA 0x4U - FrPDelayCompensationB 0x1U - FrPClusterDriftDamping 0x34U - FrPDecodingCorrection */ 0x34010404U,

	1 • Set FrPDecodingCorrection as 52	

1.2.4.13 Member: GTUC06

Table 63 GTUC06

Name	GTUC06	
Type	uint32	
Description	Configuration value for register GTUC06.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC06 register based on value of the configuration parameters FrPdAcceptedStartupRange and FrPdMaxDrift.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrPdAcceptedStartupRange as 129 • Set FrPdMaxDrift as 210	/* GTUC06 register settings */ /* 0x81U - FrPdAcceptedStartupRange 0xd2U - is same as FrPdMaxDrift */ 0x00d20081U,

1.2.4.14 Member: GTUC07

Table 64 GTUC07

Name	GTUC07	
Type	uint32	
Description	Configuration value for register GTUC07.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC07 register based on value of the configuration parameters FrIfGdStaticSlot and FrIfGNumberOfStaticSlots.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0)	/* GTUC07 register settings */ /* 0x32U - FrIfGdStaticSlot

	• Configure following parameters: • Set FrIfGdStaticSlot as 50 • Set FrIfGNumberOfStaticSlots as 12	0xc - FrIfGNumberOfStaticSlots */ 0x000c0032U,

1.2.4.15 Member: GTUC08

Table 65 GTUC08

Name	GTUC08	
Type	uint32	
Description	Configuration value for register GTUC08.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC08 register based on value of the configuration parameters FrIfGdMinislot and FrIfGNumberOfMinislots.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrIfGdMinislot as 4 • Set FrIfGNumberOfMinislots as 75	/* GTUC08 register settings */ /* 0x4U - FrIfGdMinislot 0x4bU - FrIfGNumberOfMinislots */ 0x004b0004U,

1.2.4.16 Member: GTUC09

Table 66 GTUC09

Name	GTUC09	
Type	uint32	
Description	Configuration value for register GTUC09.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC09 register based on value of the configuration parameters FrIfgdActionPointOffset, FrIfgdMinislotActionPointOffset and FrIfgdDynamicSlotIdlePhase.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0,	/* GTUC09 register settings */

	FrIfCluster_0) • Configure following parameters: • Set FrIfgdActionPointOffset as 8 • Set FrIfgdMinislotActionPointOffset as 3 • Set FrIfgdDynamicSlotIdlePhase as 1	/* 0x8U - FrIfgdActionPointOffset 0x3U - FrIfgdMinislotActionPointOffset 0x1U - FrIfgdDynamicSlotIdlePhase */ 0x00010308U,

1.2.4.17 Member: GTUC10

Table 67 GTUC10

Name	GTUC10	
Type	uint32	
Description	Configuration value for register GTUC10.	
Verification method	The structure member is generated as numeric value aligned to members of GTUC10 register based on value of the configuration parameters FrPOffsetCorrectionOut and FrPRateCorrectionOut.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrPOffsetCorrectionOut as 50 • Set FrPRateCorrectionOut as 210	/* GTUC10 register settings */ /* 0x32U - FrPOffsetCorrectionOut 0xd2U - FrPRateCorrectionOut */ 0x00d20032U,

1.2.4.18 Member: GTUC11

Table 68 GTUC11

Name	GTUC11
Type	uint32
Description	Configuration value for register GTUC11.

Verification method	The structure member is generated as numeric value 0. *Note: The member is not user configurable.*	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Generate configuration.	/* GTUC11 register settings */ /* 0x0000U - Unused (FrPExternOffsetControl, FrPExternRateControl 0U - FrPExternOffsetCorrection is not present in AS40 0U - FrPExternRateCorrection is not present in AS40 */ 0x00000000U,

1.2.4.19 Member: CUST1

Table 69 CUST1

Name	CUST1	
Type	uint32	
Description	Configuration value for register CUST1.	
Verification method	The structure member is generated as numeric value aligned to members of CUST1 register based on value of the configuration parameters FrRxInputSelectionA and FrRxInputSelectionB.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller and 1 FRIfCluster. (FrController_0, FrIfCluster_0) • Configure following parameters: • Set FrRxInputSelectionA as FR_RXSEL0_PORT14_8 • Set FrRxInputSelectionB as FR_RXSEL0_PORT14_7	/* CUST1 register settings */ /* 0x00U - Unused 0x00U - Reserved FR_RXSEL0 - FrRxInputSelection Channel A FR_RXSEL0 - FrRxInputSelection Channel B 0x00U - Unused */ 0x00000000U

1.2.5 Structure: Fr_17_Eray_< ConfigShortName >_kLPduConfig_< FrIfCtrlIdx>[<LPduCount>]

Table 70 Fr_17_Eray_< ConfigShortName >_kLPduConfig_<FrIfCtrlIdx>[<LPduCount>]

Name	Fr_17_Eray_< ConfigShortName >_kLPduConfig_<FrIfCtrlIdx>[<LPduCount>]	
Type	Fr_17_Eray_LPduConfigType	
Description	Array of LPdus configuration for the individual FlexRay controller.	
Verification method	The generated file has array Fr_17_Eray_< ConfigShortName >_kLPduConfig_<FrIfCtrlIdx>[<LPduCount>] which contains configuration of the LPdus of individual FR controller. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'. <LPduCount>: Number of LPdu configured in container 'FrIfLPdu/*'	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller with 2 Lpdus and Set FrCtrlIdx as 0 • Set Name as MyConfig	/*************** LPDU configuration Controller 0 ***************/ static const Fr_17_Eray_LPduConfigType Fr_17_Eray_MyConfig_kLPduConfig_0 [2] = { /* ------------------------- LPDU 0 ------------------------------ */ { /* 3U - Slot ID 1U - Cycle code 3U, - FrPChannels , add 0x1 as the hw regs take ChannelA = 1, ChannelB = 2 and ChannelAB = 3 1U - Message Buffer Direction: 0 - Receive, 1 - Transmit 1U, - PPIT: 0 - Disable, 1 - Enable 1U, - Transmission Mode : 1 - Single shot - always single shot 0U - Message Buffer Service Request - always set to 0 */ 0x1f010003U, /* 0x7c7U - Header CRC 2U - Payload Length Configured

```
  0U - FrIfAllowDynamicLSduLength
  */
  0x000207c7U,
  FR_17_ERAY_LPDU_NOT_RECONFIGURABLE,
  /*DEM Id for FlexRay Slot Status Error. */
  FR_17_ERAY_DEM_REPORT_DISABLED
 },
 /* ------------------------  LPDU 1 ------------------------------ */
 {
  /*
  4U - Slot ID
  1U - Cycle code
  3U, - FrPChannels , add 0x1 as the hw regs take ChannelA = 1, ChannelB =
2
    and ChannelAB = 3
  0U - Message Buffer Direction: 0 - Receive, 1 - Transmit
  1U, - PPIT: 0 - Disable, 1 - Enable
  1U, - Transmission Mode : 1 - Single shot - always single shot
  0U  - Message Buffer Service Request - always set to 0
  */
  0x1b010004U,
  /*
  0x0U - Header CRC
  2U - Payload Length Configured
  0U - FrIfAllowDynamicLSduLength
  */
  0x00020000U,
  FR_17_ERAY_LPDU_RECONFIGURABLE,
  /*DEM Id for FlexRay Slot Status Error. */
  FR_17_ERAY_DEM_REPORT_DISABLED
 }
};
```

1.2.5.1 Member: Wrhs1CfgVal

Table 71 Wrhs1CfgVal

Name	Wrhs1CfgVal	
Type	uint32	
Description	Configuration value for register WRHS1.	
Verification method	The structure member is generated as numeric value aligned to members of WRHS1 register based on value of the configuration parameters FrIfSlotId, FrIfBaseCycle, FrIfCycleRepetition, FrIfChannel and FrIfPayloadPreamble.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrIfController_0). • Configured 1 LPdu. • Following parameters configure in FrIfFrameTriggering container: • Set FrIfSlotId as 3 • Set FrIfChannel as FRIF_CHANNEL_AB • Set FrIfBaseCycle as 0 • Set FrIfPayloadPreamble as True • Set FrIfCycleRepetition as 1	/* 3U - Slot ID 1U - Cycle code 3U, - FrPChannels , add 0x1 as the hw regs take ChannelA = 1, ChannelB = 2 and ChannelAB = 3 1U - Message Buffer Direction: 0 - Receive, 1 - Transmit 1U, - PPIT: 0 - Disable, 1 - Enable 1U, - Transmission Mode : 1 - Single shot - always single shot 0U - Message Buffer Service Request - always set to 0 */ 0x1f010003U,

1.2.5.2 Member: Wrhs2CfgVal

Table 72 Wrhs2CfgVal

Name	Wrhs2CfgVal	
Type	uint32	
Description	Configuration value for register WRHS2.	
Verification method	The structure member is generated as numeric value aligned to members of WRHS2 register based on calculated CRC value and one bit is allocated to indicate the value of FrIfAllowDynamicLSduLength.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller (FrIfController_0). • Configured 1 LPdu.	/* 0x7c7U - Header CRC

	• Following parameters configured in FrIfFrameTriggering container: • Set FrIfAllowDynamicLSduLength as False	2U - Payload Length Configured 0U - FrIfAllowDynamicLSduLength */ 0x000207c7U,

1.2.5.3 Member: LpduReconfigurable

Table 73 LpduReconfigurable

Name	LpduReconfigurable	
Type	uint8	
Description	Indicates whether an LPdu is dynamically reconfigurable or not.	
Verification method	The structure member is generated as FR_17_ERAY_LPDU_NOT_RECONFIGURABLE If parameter 'FrIfLPdu/FrIfReconfigurable' is configured as 'True' else as FR_17_ERAY_LPDU_RECONFIGURABLE.	
Example(s)	**Action**	**Generated output**
	• Set FrIfReconfigurable as False	FR_17_ERAY_LPDU_NOT_RECONFIGURABLE,
	• Set FrIfReconfigurable as True	FR_17_ERAY_LPDU_RECONFIGURABLE,

1.2.5.4 Member: FrDemFTSlotStatusErrId

Table 74 FrDemFTSlotStatusErrId

Name	FrDemFTSlotStatusErrId	
Type	Dem_EventIdType	
Description	DEM Id for FlexRay Slot Status error.	
Verification method	The structure member is generated as FR_17_ERAY_DEM_REPORT_DISABLED If parameter 'FrIfController/FrIfFrameTriggering/ FrIfFrameTriggeringDemEventParameterRefs' is not configured else generate as a DemConf_DemEventParameter_<FrIfFrameTriggeringDemEventParameterRefs/*[1]/FRIF_E_LPDU_SLOTSTATUS/*[1]>.	
Example(s)	**Action**	**Generated output**
	• Configure 1 LPdu and do not configure DEM id in FrIfFrameTriggeringDemEventParameterRefs	FR_17_ERAY_LPDU_NOT_RECONFIGURABLE,
	• Configure 1 LPdu and Configure the DEM Id FrIfFrameTriggeringDemEventParameterRef.	/*DEM Id for FlexRay Slot Status Error. */ DemConf_DemEventParameter_Fr_17_EraySl

	• Set FrIfFrameTriggeringDemEventParameterRefs /*[1]/FRIF_E_LPDU_SLOTSTATUS/* as Fr_17_EraySlotStatusErr_Lpdu1	otStatusErr_Lpdu1

1.2.6 Structure:Fr_17_Eray_<ConfigShortName>_RxFifoConfig_<FrIfCtrlIdx>

Table 75 Fr_17_Eray_< ConfigShortName >_RxFifoConfig_<FrIfCtrlIdx>

Name	Fr_17_Eray_< ConfigShortName >_RxFifoConfig_<FrIfCtrlIdx>	
Type	Fr_17_Eray_RxFifoConfigType	
Description	FR receive FIFO configuration.	
Verification method	If FIFO is configured in 'FrController/FrFifo/*' then this structure is generated else it is not generated. The structure is generated as Fr_17_Eray_< ConfigShortName >_RxFifoConfig_<FrIfCtrlIdx> for individual FR controller. < ConfigShortName > is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**

	• Configure 1 FR controller with 2 LPdus and set FrCtrlIdx as 0
	• Set Name as MyConfig
	• Configure FIFO.
		static const Fr_17_Eray_RxFifoConfigType Fr_17_Eray_MyConfig_RxFifoConfig_0 =
		{
		/* Fifo Rejection Filter criteria
		
		FrChannels|(FrFid<<2)|((FrCycleRepetition|FrBaseCycle)<<16U)|(RSS<23)|(RNF <24)
		*/
		270333U,
		/* FIFO Rejection Filter Mask */
		0U,
		/* Fifo Depth. It is the number of FIFO Lpdus/FrFifoDepth which is lower */
		0U
		};

1.2.6.1 Member: FrFifoFrfCfg

Table 76 FrFifoFrfCfg

Name	FrFifoFrfCfg	
Type	uint32	
Description	Configuration value for Fifo Rejection Filter criteria.	
Verification method	The structure member is generated as numeric value based on parameters FrFrameIdRejectionFilter, FrCycleRepetition, FrBaseCycle, RejectStaticSegment and RejectNullFrames using following formula: FIFO rejection filter criteria = Fr Channel Value | (FrFrameIdRejectionFilter << 2) | ((FrCycleRepetition|FrBaseCycle) << 16U) | (RejectStaticSegment << 23) | (RejectNullFrames << 24).	
Example(s)	**Action**	**Generated output**
	• Configure following parameters in FrFifo: • Set FrFrameIdRejectionFilter as 2047 • Set FrCycleRepetition as 4 • Set FrBaseCycle as 2 • Set RejectStaticSegment as False • Set RejectNullFrame as False	/* Fifo Rejection Filter criteria FrChannels|(FrFid<<2)|((FrCycleRepetition|FrBaseCycle)<<16U)|(RSS<23)|(RNF<24) */ 401405U,
	• Configure following parameters in FrFifo: • Set FrFrameIdRejectionFilter as 2047 • Set FrCycleRepetition as 4 • Set FrBaseCycle as	/* Fifo Rejection Filter criteria FrChannels|(FrFid<<2)|((FrCycleRepetition|FrBaseCycle)<<16U)|(RSS<23)|(RNF<24) */ 25567229U,

	2 • Set RejectStaticSegment as True • Set RejectNullFrames as True	

1.2.6.2 Member: FrFifoFrfm

Table 77 FrFifoFrfm

Name	FrFifoFrfm	
Type	uint16	
Description	FIFO Rejection Filter Mask.	
Verification method	The structure member is generated as numeric value which is configured in parameter 'FrController/FrFifo/FrameIdRejectionFilterMask'.	
Example(s)	**Action**	**Generated output**
	• Configure following parameters in FrFifo: • Set FrameIdRejectionFilterMask as 2	/* FIFO Rejection Filter Mask */ 2U,

1.2.6.3 Member: FrFifoDepth

Table 78 FrFifoDepth

Name	FrFifoDepth	
Type	uint8	
Description	Fifo Depth.	
Verification method	The structure member is generated as a numeric value which is the minimum of the below 2 parameter values: • Configured value in parameter 'Fr/FrController/FrFifo/FrFifoDepth'. • Numbers of LPdus which are satisfy the FIFO criteria.	
Example(s)	**Action**	**Generated output**
	• Set FrFifoDepth as 1 • Configure 6 LPdus which are not satisfying FIFO criteria.	/* Fifo Depth. It is the number of FIFO Lpdus/FrFifoDepth which is lower */ 0U
	• Set FrFifoDepth as 1	/* Fifo Depth. It is the number of FIFO Lpdus/FrFifoDepth

	• Configure 8 LPdus, Out of that 1 LPdu is satisfying FIFO criteria.	which is lower */ 1U

1.2.7 Array: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[63]

Table 79 Fr_17_Eray_< ConfigShortName >_RxFifoConfig_<FrIfCtrlIdx>[63]

Name	Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[63]	
Type	uint32	
Description	FlexRay protocol configuration parameters for a individual FlexRay controller	
Verification method	The array is generated as Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[63] for individual FR controller. < ConfigShortName> is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'.	
Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller with 2 LPdus and set FrCtrlIdx as 0 • Set as Name as MyConfig	static const uint32 Fr_17_Eray_MyConfig_CCConfigArray_0[63] = { 0x000f4240U, /* FrIfGdCycle */ 0x00009c40U, /* UT: FrPMicroPerCycle */ 0x00013972U, /* FrPdListenTimeout */ 0x000003e8U, /* FrIfGMacroPerCycle */ 0x000003e8U, /* FrIfGdMacrotick */ 0x0000004bU, /* FrIfGNumberOfMinislots */ 0x0000000cU, /* FrIfGNumberOfStaticSlots */ 0x00000059U, /* FrIfGdNit */ 0x00000032U, /* FrIfGdStaticSlot */ 0x0000004cU, /* FrIfgdWakeupRxWindow */ 0x00000003U, /* FrPKeySlotId */ 0x0000003fU, /* FrPLatestTx */ 0x00000032U, /* FrPOffsetCorrectionOut */ 0x00000394U, /* FrPOffsetCorrectionStart */ 0x000000d2U, /* FrPRateCorrectionOut */ 0x00000000U, /* Second Keyslot ID */ 0x00000081U, /* FrPdAcceptedStartupRange */

	0x0000001fU, /* FrIfGColdStartAttempts */ 0x0000003fU, /* FrIfGCycleCountMax */ 0x00000010U, /*FrIfGListenNoise */ 0x00000001U, /* FrIfGMaxWithoutClockCorrectFatal */ 0x00000001U, /* FrIfGMaxWithoutClockCorrectPassive */ 0x00000002U, /* FrIfGNetworkManagementVectorLength */ 0x00000004U, /* FrIfGPayloadLengthStatic */ 0x00000004U, /* FrIfGSyncFrameIDCountMax maps to FrIfGSyncNodeMax FR Pr 2.1 */ 0x00000008U, /* FrIfgdActionPointOffset */ 0x00000000U, /* FrIfGdBit */ 0x00000061U, /* FrIfGdCasRxLowMax */ 0x00000001U, /* FrIfgdDynamicSlotIdlePhase */ 0x00000003U, /* FrIfgdMinislotActionPointOffset */ 0x00000004U, /* FrIfGdMinislot */ 0x00000000U, /* 0 - T12_5NS -> 10 Mbps */ 0x00000000U, /* FrIfGdSymbolWindow */ 0x00000008U, /* FrIfgdActionPointOffset */ 0x0000000aU, /* FrIfGdTSSTransmitter */ 0x00000012U, /* FrIfgdWakeupRxIdle */ 0x00000012U, /* FrIfgdWakeupRxLow */ 0x0000003cU, /* FrIfGdWakeupTxActive */ 0x000000b4U, /* FrIfGdWakeupTxIdle */ 0x00000007U, /* FrPAllowPassiveToActive */ 0x00000002U, /* FrPChannels */ 0x00000001U, /* FrPClusterDriftDamping */ 0x00000034U, /* FrPDecodingCorrection */ 0x00000004U, /* FrPDelayCompensationA */ 0x00000004U, /* FrPDelayCompensationB */ 0x0000000aU, /* FrPMacroInitialOffsetA */ 0x0000000aU, /* FrPMacroInitialOffsetB */ 0x00000018U, /* FrPMicroInitialOffsetA */ 0x00000018U, /* FrPMicroInitialOffsetB */ 0x0000007fU, /* FrPPayloadLengthDynMax */

		0x00000001U, /* 1 - N2SAMPLES - Fixed at N2 samples as the baudrate supported is 10Mbit/s */ 0x00000000U, /* FrPWakeupChannel -> 0 - FR_CHANNEL_A */ 0x00000002U, /* FrPWakeupPattern */ 0x00000001U, /* FrPdMicrotick -> 1 - T25NS */ 0x00000000U, /* FrIfGdIgnoreAfterTx - Set to 0 for FR Pr 2.1 */ 0x00000001U, /* FrPAllowHaltDueToClock */ 0x00000000U, /* FrPExternalSync - Set to 0 for FR Pr 2.1 */ 0x00000000U, /* FrPFallBackInternal - Set to 0 for FR Pr 2.1 */ 0x00000000U, /* FrPKeySlotOnlyEnabled */ 0x00000001U, /* FrPKeySlotUsedForStartup */ 0x00000001U, /* FrPKeySlotUsedForSync */ 0x00000000U, /* FrPNmVectorEarlyUpdate - Set to 0 for FR Pr 2.1 */ 0x00000000U /* FrPTwoKeySlotMode - Set to 0 for FR Pr 2.1 */ };

1.2.7.1 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[0]

Table 80 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[0]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[0]	
Type	uint32	
Description	Configuration value of FrIfGdCycle.	
Verification method	The array member is generated as numeric value based on parameter 'FrIfCluster/FrIfGdCycle' with following formula: Generated Value = FrIfGdCycle * 1000000000	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdCycle as 0.001	0x000f4240U, /* FrIfGdCycle */

1.2.7.2 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[1]

Table 81 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[1]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[1]
Type	uint32

Description	Configuration value of FrPMicroPerCycle.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/ FrPMicroPerCycle'.	
Example(s)	**Action**	**Generated output**
	• Set FrPMicroPerCycle as 40000	0x00009c40U, /* UT: FrPMicroPerCycle */

1.2.7.3 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[2]

Table 82 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[2]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[2]	
Type	uint32	
Description	Configuration value of FrPdListenTimeout.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/ FrPdListenTimeout'.	
Example(s)	**Action**	**Generated output**
	• Set FrPdListenTimeout as 80242	0x00013972U, /* FrPdListenTimeout */

1.2.7.4 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[3]

Table 83 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[3]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[3]	
Type	uint32	
Description	Configuration value of FrIfGMacroPerCycle.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGMacroPerCycle'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGMacroPerCycle as 1000	0x000003e8U, /* FrIfGMacroPerCycle */

1.2.7.5 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[4]

Table 84 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[4]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[4]
Type	uint32
Description	Configuration value of FrIfGdMacrotick.

Verification method	The array member is generated as numeric value based on parameter 'FrIfCluster/FrIfGdMacrotick' with following formula: Generated value = FrIfGdMacrotick * 1000000000	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdMacrotick as 1.0E-6	0x000003e8U, /* FrIfGdMacrotick */

1.2.7.6 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[5]

Table 85 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[5]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[5]	
Type	uint32	
Description	Configuration value of FrIfGNumberOfMinislots.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGNumberOfMinislots'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGNumberOfMinislots as 75	0x0000004bU, /* FrIfGNumberOfMinislots */

1.2.7.7 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[6]

Table 86 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[6]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[6]	
Type	uint32	
Description	Configuration value of FrIfGNumberOfStaticSlots.	
Verification method	The array member is generated as numeric value which is configured in parameter 'F FrIfCluster/FrIfGNumberOfStaticSlots'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGNumberOfStaticSlots as 12	0x0000000cU, /* FrIfGNumberOfStaticSlots */

1.2.7.8 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[7]

Table 87 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[7]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[7]
Type	uint32

Description	Configuration value of FrIfGdNit.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGdNit'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdNit as 89	0x00000059U, /* FrIfGdNit */

1.2.7.9 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[8]

Table 88 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[8]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[8]	
Type	uint32	
Description	Configuration value of FrIfGdStaticSlot.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGdStaticSlot'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdStaticSlot as 50	0x00000032U, /* FrIfGdStaticSlot */

1.2.7.10 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[9]

Table 89 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[9]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[9]	
Type	uint32	
Description	Configuration value of FrIfgdWakeupRxWindow.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/ FrIfgdWakeupRxWindow'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdWakeupRxWindow as 76	0x0000004cU, /* FrIfgdWakeupRxWindow */

1.2.7.11 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[10]

Table 90 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[10]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[10]
Type	uint32
Description	Configuration value of FrPKeySlotId.

Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPKeySlotId'.	
Example(s)	**Action**	**Generated output**
	• Set FrPKeySlotId as 3	0x00000003U, /* FrPKeySlotId */

1.2.7.12 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[11]

Table 91 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[11]

Name	Fr_17_Eray_< ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[11]	
Type	uint32	
Description	Configuration value of FrPLatestTx.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPLatestTx'.	
Example(s)	**Action**	**Generated output**
	• Set FrPLatestTx as 63	0x0000003fU, /* FrPLatestTx */

1.2.7.13 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[12]

Table 92 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[12]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[12]	
Type	uint32	
Description	Configuration value of FrPOffsetCorrectionOut.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPOffsetCorrectionOut'.	
Example(s)	**Action**	**Generated output**
	• Set FrPOffsetCorrectionOut as 50	0x00000032U, /* FrPOffsetCorrectionOut */

1.2.7.14 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[13]

Table 93 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[13]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[13]	
Type	uint32	
Description	Configuration value of FrPOffsetCorrectionStart.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPOffsetCorrectionStart'.	
Example(s)	**Action**	**Generated output**

	• Set FrPOffsetCorrectionStart as 916	0x00000394U, /* FrPOffsetCorrectionStart */

1.2.7.15 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[14]

Table 94 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[14]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[14]	
Type	uint32	
Description	Configuration value of FrPRateCorrectionOut.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPRateCorrectionOut'.	
Example(s)	**Action**	**Generated output**
	• Set FrPRateCorrectionOut as 210	0x000000d2U, /* FrPRateCorrectionOut */

1.2.7.16 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[15]

Table 95 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[15]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[15]	
Type	uint32	
Description	Configuration value of Second Keyslot ID.	
Verification method	The array member is generated as numeric value 0. *Note: Array member is not configurable by user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration.	0x00000000U, /* Second Keyslot ID */

1.2.7.17 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[16]

Table 96 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[16]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[16]
Type	uint32
Description	Configuration value of FrPdAcceptedStartupRange.
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPdAcceptedStartupRange'.

Example(s)	Action	Generated output
	• Set FrPdAcceptedStartupRange as 129	0x00000081U, /* FrPdAcceptedStartupRange */

1.2.7.18 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[17]

Table 97 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[17]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[17]	
Type	uint32	
Description	Configuration value of FrIfGColdStartAttempts.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGColdStartAttempts'.	
Example(s)	**Action**	**Generated output**
	• FrIfGColdStartAttempts = 31	0x0000001fU, /* FrIfGColdStartAttempts */

1.2.7.19 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[18]

Table 98 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[18]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[18]	
Type	uint32	
Description	Configuration value of FrIfGCycleCountMax.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGCycleCountMax'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGCycleCountMax as 63	0x0000003fU, /* FrIfGCycleCountMax */

1.2.7.20 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[19]

Table 99 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[19]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[19]	
Type	uint32	
Description	Configuration value of FrIfGListenNoise	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGListenNoise'.	
Example(s)	**Action**	**Generated output**

	• Set FrIfGListenNoise as 16	0x00000010U, /*FrIfGListenNoise */

1.2.7.21 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[20]

Table 100 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[20]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[20]	
Type	uint32	
Description	Configuration value of FrIfGMaxWithoutClockCorrectFatal.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGMaxWithoutClockCorrectFatal'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGMaxWithoutClockCorrectFatal as 1	0x00000001U, /* FrIfGMaxWithoutClockCorrectFatal */

1.2.7.22 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[21]

Table 101 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[21]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[21]	
Type	uint32	
Description	Configuration value of FrIfGMaxWithoutClockCorrectPassive.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGMaxWithoutClockCorrectPassive'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGMaxWithoutClockCorrectPassive as 1	0x00000001U, /* FrIfGMaxWithoutClockCorrectPassive */

1.2.7.23 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[22]

Table 102 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[22]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[22]	
Type	uint32	
Description	Configuration value of FrIfGNetworkManagementVectorLength.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGNetworkManagementVectorLength'.	
Example(s)	**Action**	**Generated output**
	• Set	0x00000002U, /*

	FrIfGNetworkManagementVectorLength as 2	FrIfGNetworkManagementVectorLength */

1.2.7.24 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[23]

Table 103 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[23]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[23]	
Type	uint32	
Description	Configuration value of FrIfGPayloadLengthStatic.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGPayloadLengthStatic'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGPayloadLengthStatic as 4	0x00000004U, /* FrIfGPayloadLengthStatic */

1.2.7.25 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[24]

Table 104 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[24]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[24]	
Type	uint32	
Description	Configuration value of FrIfGSyncFrameIDCountMax.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGSyncFrameIDCountMax'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGSyncFrameIDCountMax as 4	0x00000004U, /* FrIfGSyncFrameIDCountMax maps to FrIfGSyncNodeMax FR Pr 2.1 */

1.2.7.26 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[25]

Table 105 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[25]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[25]	
Type	uint32	
Description	Configuration value of FrIfgdActionPointOffset.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfgdActionPointOffset'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdActionPointOffs	0x00000008U, /* FrIfgdActionPointOffset */

	et as 8	

1.2.7.27 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[26]

Table 106 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[26]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[26]	
Type	uint32	
Description	Configuration value of FrIfGdBit.	
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable to user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000000U, /* FrIfGdBit */

1.2.7.28 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[27]

Table 107 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[27]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[27]	
Type	uint32	
Description	Configuration value of FrIfGdCasRxLowMax.	
Verification method	The array member is generated as numeric value which is configured in parameter ‘FrIfCluster/FrIfGdCasRxLowMax’.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdCasRxLowMax as 0x61	0x00000061U, /* FrIfGdCasRxLowMax */

1.2.7.29 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[28]

Table 108 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[28]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[28]	
Type	uint32	
Description	Configuration value of FrIfgdDynamicSlotIdlePhase.	
Verification method	The array member is generated as numeric value which is configured in parameter ‘FrIfCluster/FrIfgdDynamicSlotIdlePhase’.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdDynamicSlotIdlePh	0x00000001U, /* FrIfgdDynamicSlotIdlePhase */

	ase as 1	

1.2.7.30 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[29]

Table 109 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[29]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[29]	
Type	uint32	
Description	Configuration value of FrIfgdMinislotActionPointOffset.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfgdMinislotActionPointOffset'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdMinislotActionPointOffset as 3	0x00000003U, /* FrIfgdMinislotActionPointOffset */

1.2.7.31 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[30]

Table 110 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[30]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[30]	
Type	uint32	
Description	Configuration value of FrIfGdMinislot.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGdMinislot'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdMinislot as 4	0x00000004U, /* FrIfGdMinislot */

1.2.7.32 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[31]

Table 111 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[31]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[31]	
Type	uint32	
Description	Configuration value of 0 for speed 10 Mbps.	
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable to user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000000U, /* 0 - T12_5NS -> 10 Mbps */

1.2.7.33 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[32]

Table 112 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[32]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[32]	
Type	uint32	
Description	Configuration value of FrIfGdSymbolWindow.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGdSymbolWindow'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdSymbolWindow as 0	0x00000000U, /* FrIfGdSymbolWindow */

1.2.7.34 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[33]

Table 113 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[33]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[33]	
Type	uint32	
Description	Configuration value of FrIfgdActionPointOffset.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/ FrIfgdActionPointOffset'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdActionPointOffset as 8	0x00000008U, /* FrIfgdActionPointOffset */

1.2.7.35 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[34]

Table 114 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[34]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[34]	
Type	uint32	
Description	Configuration value of FrIfGdTSSTransmitter.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGdTSSTransmitter'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdTSSTransmitter as 10	0x0000000aU, /* FrIfGdTSSTransmitter */

1.2.7.36 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[35]

Table 115 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[35]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[35]	
Type	uint32	
Description	Configuration value of FrIfgdWakeupRxIdle.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfgdWakeupRxIdle'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdWakeupRxIdle as 18	0x00000012U, /* FrIfgdWakeupRxIdle */

1.2.7.37 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[36]

Table 116 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[36]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[36]	
Type	uint32	
Description	Configuration value of FrIfgdWakeupRxLow.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfgdWakeupRxLow'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfgdWakeupRxLow as 18	0x00000012U, /* FrIfgdWakeupRxLow */

1.2.7.38 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[37]

Table 117 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[37]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[37]	
Type	uint32	
Description	Configuration value of FrIfGdWakeupTxActive.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/ FrIfGdWakeupTxActive'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdWakeupTxActive as 0x3c	0x0000003cU, /* FrIfGdWakeupTxActive */

1.2.7.39 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[38]

Table 118 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[38]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[38]	
Type	uint32	
Description	Configuration value of FrIfGdWakeupTxIdle.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrIfCluster/FrIfGdWakeupTxIdle'.	
Example(s)	**Action**	**Generated output**
	• Set FrIfGdWakeupTxIdle as 0xb4	0x000000b4U, /* FrIfGdWakeupTxIdle */

1.2.7.40 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[39]

Table 119 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[39]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[39]	
Type	uint32	
Description	Configuration value of FrPAllowPassiveToActive.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPAllowPassiveToActive'.	
Example(s)	**Action**	**Generated output**
	• Set FrPAllowPassiveToActive as 7	0x00000007U, /* FrPAllowPassiveToActive */

1.2.7.41 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[40]

Table 120 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[40]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[40]	
Type	uint32	
Description	Configuration value of FrPChannels.	
Verification method	The array member is generated as numeric value based on 'FrController/FrPChannels' as follows: If FrPChannels is configured as FR_CHANNEL_AB then value is generated as 2 If FrPChannels is configured as FR_CHANNEL_B then value is generate das 1 If FrPChannels is configured as FR_CHANNEL_A then value is generated as 0	
Example(s)	**Action**	**Generated output**
	• Set FrPChannels as	0x00000002U, /* FrPChannels */

	FR_CHANNEL_AB	

1.2.7.42 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[41]

Table 121 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[41]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[41]	
Type	uint32	
Description	Configuration value of FrPClusterDriftDamping.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPClusterDriftDamping'.	
Example(s)	**Action**	**Generated output**
	• Set FrPClusterDriftDamping as 1	0x00000001U, /* FrPClusterDriftDamping */

1.2.7.43 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[42]

Table 122 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[42]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[42]	
Type	uint32	
Description	Configuration value of FrPDecodingCorrection.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPDecodingCorrection'.	
Example(s)	**Action**	**Generated output**
	• Set FrPDecodingCorrection as 0x34	0x00000034U, /* FrPDecodingCorrection */

1.2.7.44 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[43]

Table 123 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[43]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[43]	
Type	uint32	
Description	Configuration value of FrPDelayCompensationA.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPDelayCompensationA'.	
Example(s)	**Action**	**Generated output**
	• Set FrPDelayCompensationA as 4	0x00000004U, /* FrPDelayCompensationA */

1.2.7.45 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[44]

Table 124 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[44]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[44]	
Type	uint32	
Description	Configuration value of FrPDelayCompensationB.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPDelayCompensationB'.	
Example(s)	**Action**	**Generated output**
	• Set FrPDelayCompensationB as 4	0x00000004U, /* FrPDelayCompensationB */

1.2.7.46 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[45]

Table 125 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[45]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[45]	
Type	uint32	
Description	Configuration value of FrPMacroInitialOffsetA.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPMacroInitialOffsetA'.	
Example(s)	**Action**	**Generated output**
	• Set FrPMacroInitialOffsetA as 10	0x0000000aU, /* FrPMacroInitialOffsetA */

1.2.7.47 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[46]

Table 126 Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[46]

Name	Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[46]	
Type	uint32	
Description	Configuration value of FrPMacroInitialOffsetB.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPMacroInitialOffsetB'.	
Example(s)	**Action**	**Generated output**
	• Set FrPMacroInitialOffsetB as 10	0x0000000aU, /* FrPMacroInitialOffsetB */

1.2.7.48 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[47]

Table 127 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[47]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[47]	
Type	uint32	
Description	Configuration value of FrPMicroInitialOffsetA.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPMicroInitialOffsetA'.	
Example(s)	**Action**	**Generated output**
	• Set FrPMicroInitialOffsetA as 0x18	0x00000018U, /* FrPMicroInitialOffsetA */

1.2.7.49 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[48]

Table 128 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[48]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[48]	
Type	uint32	
Description	Configuration value of FrPMicroInitialOffsetB.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPMicroInitialOffsetB'.	
Example(s)	**Action**	**Generated output**
	• Set FrPMicroInitialOffsetB as 0x18	0x00000018U, /* FrPMicroInitialOffsetB */

1.2.7.50 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[49]

Table 129 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[49]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[49]	
Type	uint32	
Description	Configuration value of FrPPayloadLengthDynMax.	
Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPPayloadLengthDynMax'.	
Example(s)	**Action**	**Generated output**
	• Set FrPPayloadLengthDynMax as 0x7F	0x0000007fU, /* FrPPayloadLengthDynMax */

1.2.7.51 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[50]

Table 130 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[50]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[50]	
Type	uint32	
Description	Configuration value of FrPSamplesPerMicrotick which is fixed as N2 samples, as the baudrate supported is 10Mbit/s.	
Verification method	Array member is generated as numeric value 1. *Note: Array member is not configurable by user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000001U, /* 1 - N2SAMPLES - Fixed at N2 samples as the baudrate supported is 10Mbit/s */

1.2.7.52 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[51]

Table 131 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[51]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[51]	
Type	uint32	
Description	Configuration value of FrPWakeupChannel.	
Verification method	The array member is generated as numeric value which depends on configuration parameter 'FrController/FrPWakeupChannel'. If FrPWakeupChannel is configured as FR_CHANNEL_A then value is generated as 0U If FrPWakeupChannel is configured as FR_CHANNEL_B then value is generated as delete 1U	
Example(s)	**Action**	**Generated output**
	• Set FrPWakeupChannel as FR_CHANNEL_A	0x00000000U, /* FrPWakeupChannel -> 0 - FR_CHANNEL_A */
	• Set FrPWakeupChannel as FR_CHANNEL_B	0x00000001U, /* FrPWakeupChannel -> 1 - FR_CHANNEL_B */

1.2.7.53 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[52]

Table 132 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[52]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[52]
Type	uint32
Description	Configuration value of FrPWakeupPattern.

Verification method	The array member is generated as numeric value which is configured in parameter 'FrController/FrPWakeupPattern'.	
Example(s)	**Action**	**Generated output**
	• Set FrPWakeupPattern as 2	0x00000002U, /* FrPWakeupPattern */

1.2.7.54 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[53]

Table 133 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[53]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[53]	
Type	uint32	
Description	Configuration value of FrPdMicrotick which is fixed value 1 (T25NS).	
Verification method	Array member is generated as numeric value 1. *Note: Array member is not configurable by user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000001U, /* FrPdMicrotick -> 1 - T25NS */

1.2.7.55 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[54]

Table 134 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[54]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[54]	
Type	uint32	
Description	Configuration value of FrIfGdIgnoreAfterTx which is fixed value 0 to support FR protocol specification 2.1	
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable by user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000000U, /* FrIfGdIgnoreAfterTx - Set to 0 for FR Pr 2.1 */

1.2.7.56 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[55]

Table 135 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[55]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[55]
Type	uint32

Description	Configuration value of FrPAllowHaltDueToClock.
Verification method	The array member is generated as numeric value which is depends on configuration of parameter 'FrController/FrPAllowHaltDueToClock'. If FrPAllowHaltDueToClock is configured as 'True' then array index is generated as 1U else it is generated as 0U.

Example(s)	**Action**	**Generated output**
	• Set FrPAllowHaltDueToClock as True	0x00000001U, /* FrPAllowHaltDueToClock */
	• Set FrPAllowHaltDueToClock as False	0x00000000U, /* FrPAllowHaltDueToClock */

1.2.7.57 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[56]

Table 136 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[56]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[56]
Type	uint32
Description	Configuration value of FrPExternalSync which is fixed value 0 to support FR protocol specification 2.1
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable by user*

Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000000U, /* FrPExternalSync - Set to 0 for FR Pr 2.1 */

1.2.7.58 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[57]

Table 137 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[57]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[57]
Type	uint32
Description	Configuration value of FrPFallBackInternal which is fixed value 0 to support FR protocol specification 2.1
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable by user*

Example(s)	Action	Generated output
	• Generate configuration	0x00000000U, /* FrPFallBackInternal - Set to 0 for FR Pr 2.1 */

1.2.7.59 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[58]

Table 138 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[58]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[58]	
Type	uint32	
Description	Configuration value of FrPKeySlotOnlyEnabled.	
Verification method	The array member is generated as numeric value which depends on configuration of parameter 'FrController/FrPKeySlotOnlyEnabled'. If FrPKeySlotOnlyEnabled is configured as 'True' then array index is generated as 1U else it is generated as 0U.	
Example(s)	**Action**	**Generated output**
	• Set FrPKeySlotOnlyEnabled as True	0x00000001U, /* FrPKeySlotOnlyEnabled */
	• Set FrPKeySlotOnlyEnabled as False	0x00000000U, /* FrPKeySlotOnlyEnabled */

1.2.7.60 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[59]

Table 139 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[59]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[59]	
Type	uint32	
Description	Configuration value of FrPKeySlotUsedForStartup.	
Verification method	The array member is generated as numeric value which depends on configuration of parameter 'FrController/FrPKeySlotUsedForStartup'. If FrPKeySlotUsedForStartup is configured as 'True' then array index is generated as 1U else it is generated as 0U.	
Example(s)	**Action**	**Generated output**
	• Set FrPKeySlotUsedForStartup as True	0x00000001U, /* FrPKeySlotUsedForStartup */
	• Set FrPKeySlotUsedForStar	0x00000000U, /* FrPKeySlotUsedForStartup */

	tup as False	

1.2.7.61 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[60]

Table 140 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[60]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[60]	
Type	uint32	
Description	Configuration value of FrPKeySlotUsedForSync.	
Verification method	The array member is generated as numeric value which depends on configuration of parameter 'FrController/ FrPKeySlotUsedForSync'. If FrPKeySlotUsedForSync is configured as 'True' then array index is generated as 1U else it is generated as 0U.	
Example(s)	**Action**	**Generated output**
	• Set FrPKeySlotUsedForSync as True	0x00000001U, /* FrPKeySlotUsedForSync */
	• Set FrPKeySlotUsedForSync as False	0x00000000U, /* FrPKeySlotUsedForSync */

1.2.7.62 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[61]

Table 141 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[61]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[61]	
Type	uint32	
Description	Configuration value of FrPNmVectorEarlyUpdate which is fixed value 0 to support FR protocol specification 2.1	
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable by user*	
Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000000U, /* FrPNmVectorEarlyUpdate - Set to 0 for FR Pr 2.1 */

1.2.7.63 Member: Fr_17_Eray_<ConfigShortName>_CCConfigArray_<FrIfCtrlIdx>[62]

Table 142 Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[62]

Name	Fr_17_Eray_< ConfigShortName >_CCConfigArray_<FrIfCtrlIdx>[62]
Type	uint32

Description	Configuration value of FrPTwoKeySlotMode which is fixed value 0 to support FR protocol specification 2.1
Verification method	Array member is generated as numeric value 0. *Note: Array member is not configurable by user*

Example(s)	**Action**	**Generated output**
	• Generate configuration	0x00000000U /* FrPTwoKeySlotMode - Set to 0 for FR Pr 2.1 */

1.2.8 Array: Fr_17_Eray_< ConfigShortName>_LPduIdx2MsgBuff_<FrIfCtrlIdx>[<LpduCount>]

Table 143 Fr_17_Eray_< ConfigShortName >_LPduIdx2MsgBuff_<FrIfCtrlIdx>[<LpduCount>]

Name	Fr_17_Eray_< ConfigShortName >_LPduIdx2MsgBuff_<FrIfCtrlIdx>[<LpduCount>]
Type	uint8
Description	LPdu to message buffer index mapping for individual FR controller.
Verification method	The array is generated as Fr_17_Eray_< ConfigShortName>_LPduIdx2MsgBuff_<FrIfCtrlIdx>[<LpduCount>] for Individual FR controller. < ConfigShortName> is string configured in parameter 'FrMultipleConfiguration/Name'. <FrCtrlIdx> is FR index configured for individual FR controller in 'FrController/FrCtrlIdx'. <LPduCount> is number of LPdus configured for FR controller. Array member is generated as the message buffer index value from the 'FrIf/FrIfCluster/FrIfController/FrIfFrameTriggering/Index' in case LPdu is not configured as FIFO. If LPdu is configured as FIFO then message buffer index is generates as 255U.

Example(s)	**Action**	**Generated output**
	• Configure 1 FR controller with 9 LPdus and set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration • None of the configured	static const uint8 Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_0[9] = {0U, 1U, 2U, 3U, 4U, 5U, 6U, 7U, 8U};

	LPdus match the receive FIFO filter criteria	
	• Configure 1 FR controller with 9 LPdus and set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration • The LPdu with index 7 matches the FIFO criteria.	static const uint8 Fr_17_Eray_FrMultipleConfiguration_LPduIdx2MsgBuff_0[9] = {0U, 1U, 2U, 3U, 4U, 5U, 6U, 255U, 7U};

1.2.9 Array: Fr_17_Eray_< ConfigShortName>_DataPointerOffset_<FrIfCtrlIdx>[LPduCount]

Table 144 Fr_17_Eray_< ConfigShortName >_DataPointerOffset_<FrIfCtrlIdx>[LPduCount]

Name	Fr_17_Eray_< ConfigShortName >_DataPointerOffset_<FrIfCtrlIdx>[LPduCount]	
Type	uint16	
Description	Array of data pointer offsets of the message buffers within the message RAM.	
Verification method	The array is generated as Fr_17_Eray_<ConfigShortName>_LPduIdx2MsgBuff_<FrIfCtrlIdx>[<LPduCount>] for individual FR controller. < ConfigShortName> is string configured in parameter ‘FrMultipleConfiguration/Name’. <FrCtrlIdx> is FR index configured for individual FR controller in ‘FrController/FrCtrlIdx’. <LPduCount> is number of LPdus configured for FR controller. Array member is generated value using parameter ‘FrIfController/FrIfFrameTriggering/FrIfLSduLength’ configured for LPdu. First array member is generated as size of header information (Number of LPdu * 4). Further array members are generated based on length configured for LPdus.	
Example(s)	**Action**	**Generated output**

	• Configure 1 FR controller with 9 LPdus. (FrIfLPdu_0 to FrIfLPdu_8) • Set FrCtrlIdx as 0 • Set Name as FrMultipleConfiguration • Set FrIfLSduLength as 4 for all configured LPdus.	static const uint16 Fr_17_Eray_FrMultipleConfiguration_DataPointerOffset_0[9] = {36U, 37U, 38U, 39U, 40U, 41U, 42U, 43U, 44U};

1.3 File: Fr_17_Eray[_<variant>]_PBcfg.h

The generated header file contains the declaration of the root configuration structure. Post-build time configuration mechanism allows configurable functionality of FR driver that is deployed as object code. The file is generated in 'inc' folder.

1.3.1 Structure: Fr_17_Eray_Config[_<variant>]

Table 145 Fr_17_Eray_Config[_<varaint>]

Name	Fr_17_Eray_Config[_<variant>]	
Type	Fr_17_Eray_ConfigType	
Description	Declaration of root configuration structure of FR driver which will be used during initialization.	
Verification method	The generated structure is present in Fr_17_Eray[_<variant>]_PBcfg.h file. The <variant> indicates the name of the post-build variant. For a variant-aware configuration the structure name is appended with the variant name. For variant-unaware configuration <variant> is ignored.	
Example(s)	**Action**	**Generated output**
	Configure and generate FR driver (variant-unaware).	extern const Fr_17_Eray_ConfigType Fr_17_Eray_Config;
	Configure and generate FR driver (variant-aware, variant name is 'Petrol').	extern const Fr_17_Eray_ConfigType Fr_17_Eray_Config_Petrol;

Revision history

Major changes since the last revision

Date	Version	Description
2020-11-09	V4.0	• Document moved to Released state
2020-10-29	V3.1	• Fr_17_Eray driver chapter moved from MC-ISAR_TC3xx_Config_Verification_Manual_COM-E.pdf to this document • Added the macros FR_17_ERAY_RUNTIME_ERROR_DETECT and FR_17_ERAY_EXTENDED_LPDU_REPORTING. • Updated CUST1 register settings
2019-07-11	V3.0	Document moved to Released state.
2019-07-11	V2.1	Added the macro: FR_17_ERAY_TX_CONFLICT_DETECTION.
2019-02-28	V1.10.0_2.0	Added PBcfg.h file. Added Instance ID.
2019-02-27	V1.10.0_1.0	Released.
2019-02-27	V1.10.0_0.3	Review comments fixed.
2019-02-27	V1.10.0_0.2	Initial review comments fixed.
2019-02-25	V1.10.0_0.1	Initial Draft

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