Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

© CommunicationInterface	Interface for communication operations
© EthernetInterface	Ethernet communication interface implementation
O UARTInterface	UART communication interface implementation

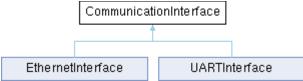
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CommunicationInterf ace Class Reference abstract

Public Member Functions | List of all members

Interface for communication operations. More...

Inheritance diagram for CommunicationInterface:



Public Member Functions

	~CommunicationInterface ()=default
virtual HRESULT	Connect (const InterfaceConnection interfaceName, const BSTR comPortOrlp, const UINT32 baudRateOrPort, const BSTR protocol)=0 Establishes a connection with the specified interface.
virtual HRESULT	Disconnects ()=0 Disconnects the active communication interface.
virtual HRESULT	GetConnectionStatus (InterfaceConnection connectedInterfaceName, BOOL *connectionStatus) const =0 Retrieves the connection status of the current interface.
virtual HRESULT	GetHWVersion (HWVersion *hwVersion) const =0 Retrieves the hardware version of the communication device.
virtual HRESULT	GetVersion (const VersionInfo enumVal, UINT32 *versionInfo) const =0 Retrieves the version information of a specified version type.
virtual HRESULT	RunTest (const Group group, UINT32 subTest, BSTR *logOutput)=0 Runs a specific test on the communication interface.

Detailed Description

Interface for communication operations.

Constructor & Destructor Documentation

CommunicationInterface()

virtual

CommunicationInterface::~CommunicationInterface() virtual default



Member Function Documentation

◆Connect()

virtual HRESULT

CommunicationInterface::Connect (const InterfaceConnection inte

const BSTR com const UINT32 bau const BSTR prot

Establishes a connection with the specified interface.

Parameters

interfaceName [in] The interface to connect to.

comPortOrlp [in] Additional input parameter (e.g., COM por **baudRateOrPort** [in] Baud rate (if serial communication) or por **protocol** [in] Communication protocol (e.g., TCP, UDP,

Returns

[out] HRESULT result of the connection attempt.

Implemented in **EthernetInterface**, and **UARTInterface**.

Disconnect()

virtual HRESULT

CommunicationInterface::Disconnect

e::Disconnect () nodiscard pure virtual

Disconnects the active communication interface.

Returns

[out] HRESULT result of the disconnection attempt.

Implemented in EthernetInterface, and UARTInterface.

GetConnectionStatus()

virtual HRESULT

CommunicationInterface::GetConnectionStatus (InterfaceConnecti BOOL *

Retrieves the connection status of the current interface.

Parameters

connectedInterfaceName [In] Interface name. **connectionStatus** [out] Returns the connection status.

Returns

[out] HRESULT result of the operation.

Implemented in EthernetInterface, and UARTInterface.

GetHWVersion()

virtual HRESULT

CommunicationInterface::GetHWVersion (HWVersion * hwVersion)

Retrieves the hardware version of the communication device.

Parameters

hwVersion [out] Returns the Hardware Version.

Returns

[out] HRESULT result of the operation.

Implemented in EthernetInterface, and UARTInterface.

GetVersion()

virtual HRESULT

CommunicationInterface::GetVersion (const VersionInfo enumVal, UINT32 * versionInfo

Retrieves the version information of a specified version type.

Parameters

enumVal [in] The version type (enumeration value). versionInfo [out] Returns version info.

Returns

[out] HRESULT result of the operation.

Implemented in EthernetInterface, and UARTInterface.

RunTest()

virtual HRESULT

CommunicationInterface::RunTest (const **Group** group,

subTest, UINT32

logOutput) nodiscar BSTR *

Runs a specific test on the communication interface.

Parameters

[in] The test group to which the test belongs. group

subTest [in] The specific sub-test to run or we can send multi of the group by ORing them.logOutput [out] Returns the log output.

Returns

[out] HRESULT result of the test run.

Implemented in **EthernetInterface**, and **UARTInterface**.

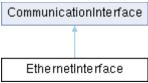
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EthernetInterface Class Reference

Public Member Functions | List of all members

Ethernet communication interface implementation. More...

Inheritance diagram for EthernetInterface:



Public Member Functions

EthernetInterface () Default constructor for **EthernetInterface**. virtual ~EthernetInterface () Destructor for **EthernetInterface**. virtual HRESULT Connect (const InterfaceConnection interfaceName, const BSTR ip, const UINT32 port, const BSTR protocol) override Establishes a connection with the specified Ethernet interface. virtual HRESULT **Disconnect** () override Disconnects the active Ethernet communication interface. virtual HRESULT GetConnectionStatus (InterfaceConnection connectedInterfaceName, BOOL *connectionStatus) const override Retrieves the connection status of the current Ethernet interface. virtual HRESULT **GetHWVersion** (**HWVersion** *hwVersion) const override Retrieves the hardware version of the Ethernet device. virtual HRESULT GetVersion (const VersionInfo enumVal, UINT32 *versionInfo) const override Retrieves the version information of a specified version type. virtual HRESULT RunTest (const Group group, UINT32 subTest, BSTR *logOutput) override Runs a specific test on the Ethernet communication interface.

▶ Public Member Functions inherited from CommunicationInterface

virtual ~CommunicationInterface ()=default

Detailed Description

 $\label{lem:eq:energy} \textbf{Ethernet communication interface implementation}.$

Constructor & Destructor Documentation

EthernetInterface()

EthernetInterface::EthernetInterface()

Default constructor for **EthernetInterface**.

~~EthernetInterface()

EthernetInterface::~EthernetInterface()

virtual

Destructor for **EthernetInterface**.

Member Function Documentation

Connect()

HRESULT

EthernetInterface::Connect (const InterfaceConnection interfaceNa

const BSTR const UINT32 const BSTR

port, protocol)

ip,

Establishes a connection with the specified Ethernet interface.

Parameters

interfaceName [in] The interface to connect to.

[in] IP address of the Ethernet device. ip [in] Port number of the Ethernet device. port

[in] Communication protocol (e.g., TCP, UDP). protocol

Returns

[out] HRESULT result of the connection attempt.

Implements CommunicationInterface.

Disconnect()

HRESULT EthernetInterface::Disconnect()

nodiscard override virtual

Disconnects the active Ethernet communication interface.

Returns

[out] HRESULT result of the disconnection attempt.

Implements CommunicationInterface.

GetConnectionStatus()

HRESULT

EthernetInterface::GetConnectionStatus (InterfaceConnection coni BOOL * coni

Retrieves the connection status of the current Ethernet interface.

Parameters

connectedInterfaceName [In] Interface name.connectionStatus [out] Returns the connection status.

Returns

[out] HRESULT result of the operation.

Implements CommunicationInterface.

GetHWVersion()

HRESULT

EthernetInterface::GetHWVersion (HWVersion * hwVersion) const

Retrieves the hardware version of the Ethernet device.

Parameters

hwVersion [out] Returns the Hardware Version.

Returns

[out] HRESULT result of the operation.

Implements CommunicationInterface.

GetVersion()

HRESULT

EthernetInterface::GetVersion (const **VersionInfo** enumVal, UINT32 * versionInfo) cons

Retrieves the version information of a specified version type.

Parameters

enumVal [in] The version type (enumeration value). **versionInfo** [out] Returns version info.

Returns

[out] HRESULT result of the operation.

Implements CommunicationInterface.

◆RunTest()

HRESULT

EthernetInterface::RunTest (const Group group,

UINT32 subTest,

BSTR * logOutput) nodiscard overrid

Runs a specific test on the Ethernet communication interface.

Parameters

group [in] The test group to which the test belongs.

subTest [in] The specific sub-test to run or we can send multi tests of the group by ORing them.logOutput [out] Returns the log output.

Returns

[out] HRESULT result of the test run.

Implements CommunicationInterface.

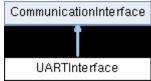
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UARTInterface Class Reference

Public Member Functions | List of all members

UART communication interface implementation. More...

Inheritance diagram for UARTInterface:



Public Member Functions

	UARTInterface () Default constructor for the UART interface.
	~UARTInterface () Destructor for the UART interface. Cleans up allocated resources.
virtual HRESULT	Connect (const InterfaceConnection interfaceName, const BSTR comPortOrlp, const UINT32 baudRateOrPort, const BSTR protocol) override Establishes a connection with the specified UART interface.
virtual HRESULT	Disconnect () override Disconnects the active UART communication interface.
virtual HRESULT	GetConnectionStatus (InterfaceConnection connectedInterfaceName, BOOL *connectionStatus) const override Retrieves the connection status of the current UART interface.
virtual HRESULT	GetHWVersion (HWVersion *hwVersion) const override Retrieves the hardware version of the UART device.
virtual HRESULT	GetVersion (const VersionInfo enumVal, UINT32 *versionInfo) const override Retrieves version information of the UART interface.
virtual HRESULT	RunTest (const Group group, UINT32 subTest, BSTR *logOutput) override Runs a specific test on the UART communication interface.

▶ Public Member Functions inherited from CommunicationInterface

virtual ~CommunicationInterface ()=default

Detailed Description

UART communication interface implementation.

This class provides the methods for connecting, disconnecting, and querying the status of a UART interface. The connection uses COM ports and baud rates to establish communication.

Constructor & Destructor Documentation

•UARTInterface()

UARTInterface::UARTInterface()

Default constructor for the UART interface.

~UARTInterface()

UARTInterface::~UARTInterface()

Destructor for the UART interface. Cleans up allocated resources.

Member Function Documentation

Connect()

HRESULT

UARTInterface::Connect (const InterfaceConnection interfaceNam

const BSTR const UINT32 const BSTR

comPortOrlp, baudRateOrF protocol)

Establishes a connection with the specified UART interface.

Parameters

interfaceName [in] The interface to connect to.

[in] The COM port for UART communication (comPortOrlp baudRateOrPort [in] The baud rate for UART communication (protocol [in] Communication protocol, which may not b

communication.

Returns

HRESULT indicating the result of the connection attempt (S Ok

Implements CommunicationInterface.

Disconnect()

HRESULT UARTInterface::Disconnect()

nodiscard override virtual

Disconnects the active UART communication interface.

Resets all connection details and frees resources.

Returns

HRESULT indicating the result of the disconnection attempt (S OK for success).

Implements CommunicationInterface.

GetConnectionStatus()

HRESULT

UARTInterface::GetConnectionStatus (InterfaceConnection connection) **BOOL*** conne

Retrieves the connection status of the current UART interface.

Parameters

connectedInterfaceName [In] Interface name. connectionStatus [out] Returns the connection status.

Returns

[out] HRESULT result of the operation.

Implements CommunicationInterface.

GetHWVersion()

HRESULT

UARTInterface::GetHWVersion (HWVersion * hwVersion) const not

Retrieves the hardware version of the UART device.

Parameters

hwVersion [out] A Returns the Hardware Version.

Returns

HRESULT indicating the result of the operation (S_OK for succe Implements CommunicationInterface.

GetVersion()

HRESULT

UARTInterface::GetVersion (const **VersionInfo** enumVal, UINT32 * versionInfo) const

Retrieves version information of the UART interface.

Parameters

enumVal [in] The version type.versionInfo [out] Returns version info.

Returns

HRESULT indicating the result of the operation (S_OK for succe Implements CommunicationInterface.

RunTest()

HRESULT

UARTInterface::RunTest (const Group group,

UINT32 subTest,

BSTR * logOutput) nodiscard

override

Runs a specific test on the UART communication interface.

Parameters

group [in] The test group to which the test belongs.

subTest [in] The specific sub-test to run or we can send multi

tests of the group by ORing them.

logOutput [out] Returns the log output.

Returns

HRESULT indicating the result of the test run (S_OK for succes

Implements CommunicationInterface.

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Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

	[detail level 12]
▼ © CommunicationInterface	Interface for communication operations
© EthernetInterface	Ethernet communication interface implementation
© UARTInterface	UART communication interface implementation

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Here is a list of all class members with links to the classes they belong to:

- Connect(): CommunicationInterface, EthernetInterface, UARTInterface
- Disconnect(): CommunicationInterface, EthernetInterface, UARTInterface
- EthernetInterface(): EthernetInterface
- GetConnectionStatus(): CommunicationInterface, EthernetInterface, UARTInterface
- GetHWVersion(): CommunicationInterface, EthernetInterface, UARTInterface
- GetVersion(): CommunicationInterface, EthernetInterface, UARTInterface
- RunTest(): CommunicationInterface, EthernetInterface, UARTInterface
- UARTInterface(): UARTInterface
- ~CommunicationInterface(): CommunicationInterface
- ~EthernetInterface(): EthernetInterface
- ~UARTInterface(): UARTInterface

Here is a list of all functions with links to the classes they belong to:

- Connect(): CommunicationInterface, EthernetInterface, UARTInterface
- Disconnect(): CommunicationInterface, EthernetInterface, UARTInterface
- EthernetInterface(): EthernetInterface
- GetConnectionStatus(): CommunicationInterface, EthernetInterface, UARTInterface
- GetHWVersion(): CommunicationInterface, EthernetInterface, UARTInterface
- GetVersion(): CommunicationInterface, EthernetInterface, UARTInterface
- RunTest(): CommunicationInterface, EthernetInterface, UARTInterface
- UARTInterface(): UARTInterface
- ~CommunicationInterface(): CommunicationInterface
- ~EthernetInterface(): EthernetInterface
- ~UARTInterface(): UARTInterface

File List

Here is a list of all files with brief descriptions:

CommunicationInterface.cpp	
CommunicationInterface.h	
devdefs.h	
EthernetInterface.cpp	
EthernetInterface.h	
UARTInterface.cpp	
UARTInterface.h	

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C:/Users/Mourya/source/repos/DLL_SBC/C ommunicationInterface.cpp File Reference

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Classes | Macros

C:/Users/Mourya/sou rce/repos/DLL_SBC/CommunicationInterfac e.h File Reference

Classes

class CommunicationInterface

Interface for communication operations. More...

Macros

#define **EXPORT_API** __declspec(dllexport)

Macro Definition Documentation

◆ EXPORT_API

#define EXPORT_API __declspec(dllexport)

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Enumerations

C:/Users/Mourya/sou rce/repos/DLL_SBC/devdefs.h File Reference

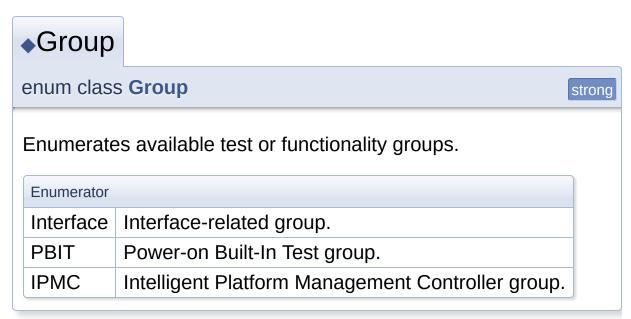
Enumerations

```
enum class HWVersion { SBC 6U }
          Enumerates supported hardware versions. More...
enum class Group { Interface , PBIT , IPMC }
          Enumerates available test or functionality groups.
          More...
enum class InterfaceTests {
          PCIE GEN4 X8 VPX = 1 << 0,
          PCIE SWITCH X8 GEN3 = 1 << 1,
          PCIE_SWITCH_VPX_X4_GEN3_CH0 = 1 << 2,
          PCIE SWITCH VPX X4 GEN3 CH1 = 1 << 3,
          PCIE_SWITCH_XMC_X8_GEN3_CH0 = 1 << 4,
          PCIE SWITCH XMC X8 GEN3 CH1 = 1 << 5,
          PCIE FPGA GEN3 X4 = 1 << 6,
          PCIE FPGA GEN3 X8 = 1 << 7,
          PCIE ETH CONTROLLER 1GBPS = 1 << 8,
          XEON 40G BASE = 1 << 9, XEON 100G BASE = 1
          << 10 , SATA NAND FLASH = 1 << 11 ,
          SATA VPX CH0 = 1 << 12 , SATA VPX CH1 = 1 <<
          13, SATA VPX CH2 = 1 << 14, SATA VPX M2 = 1
          << 15 ,
          LPC TEST = 1 << 16, XEON IPMC UART = 1 << 17
          , XEON IPMC I2C = 1 << 18 , XEON EMMC TEST =
          1 << 19,
          XEON_VPX_UART = 1 << 20 , XEON_USB = 1 << 21
          , XEON_VPX USB CH1 = 1 << 22.
          XEON VPX USB CH2 = 1 << 23
          Enumerates top-level group commands. More...
enum class VersionInfo { FPGA VERSION, API VERSION,
          GUI_VERSION , FIRMWARE_VERSION }
enum class PBITTests { PBIT_DATA }
          Bitmask flags representing tests for PBIT (Power-on
          Built-In Test) operations. More...
```

enum class InterfaceConnection { INTERFACE_UART , INTERFACE_ETHERNET , INTERFACE_UNKOWN }
Enum representing different communication interfaces.
More...

Enumeration Type Documentation







Enumerates top-level group commands.

Defines bitmask flags for various interface tests.

Enumerator	
PCIE_GEN4_X8_VPX	PCIe Gen4 x8 VPX interface.
PCIE_SWITCH_X8_GEN3	PCIe switch x8 Gen3.
PCIE_SWITCH_VPX_X4_GEN3_CH0	PCIe switch VPX x4 Gen3 channel 0.
PCIE_SWITCH_VPX_X4_GEN3_CH1	PCIe switch VPX x4 Gen3 channel 1.
PCIE_SWITCH_XMC_X8_GEN3_CH0	PCIe switch XMC x8 Gen3 channel 0.
PCIE_SWITCH_XMC_X8_GEN3_CH1	PCIe switch XMC x8 Gen3 channel 1.
PCIE_FPGA_GEN3_X4	PCIe FPGA Gen3 x4.
PCIE_FPGA_GEN3_X8	PCIe FPGA Gen3 x8.
PCIE_ETH_CONTROLLER_1GBPS	PCIe Ethernet controller 1 Gbps.
XEON_40G_BASE	Xeon 40GBase interface.
XEON_100G_BASE	Xeon 100GBase interface.
SATA_NAND_FLASH	SATA NAND flash storage.
SATA_VPX_CH0	SATA VPX channel 0.
SATA_VPX_CH1	SATA VPX channel 1.
SATA_VPX_CH2	SATA VPX channel 2.
SATA_VPX_M2	SATA M.2 VPX interface.

LPC_TEST	LPC interface test.
XEON_IPMC_UART	UART interface between Xeon and IPMC.
XEON_IPMC_I2C	I2C interface between Xeon and IPMC.
XEON_EMMC_TEST	Xeon eMMC interface test.
XEON_VPX_UART	UART over VPX on Xeon.
XEON_USB	USB interface on Xeon.
XEON_VPX_USB_CH1	USB VPX channel 1 on Xeon.
XEON_VPX_USB_CH2	USB VPX channel 2 on Xeon.

◆VersionInfo

enum class VersionInfo

strong

Enumerator	
FPGA_VERSION	Version of the FPGA (Field- Programmable Gate Array) component.
API_VERSION	Version of the system's Application Programming Interface (API).
GUI_VERSION	Version of the Graphical User Interface (GUI) component.
FIRMWARE_VERSION	Version of the firmware running on the hardware.

◆PBITTests

enum class **PBITTests**

strong

Bitmask flags representing tests for PBIT (Power-on Built-In Test) operations.

Enumerator

PBIT_DATA | PBIT data test flag.

◆InterfaceConnection

enum class InterfaceConnection

strong

Enum representing different communication interfaces.

This enum class is used to specify various types of communication interfaces supported by the system. Each value corresponds to a specific communication protocol, such as UART or Ethernet. It helps in identifying and selecting the appropriate interface for communication operations.

Enumerator	
INTERFACE_UART	UART communication interface. This value represents a UART (Universal Asynchronous Receiver-Transmitter) interface used for serial communication. It is commonly used in embedded systems for low-speed communication with peripherals.
INTERFACE_ETHERNET	Ethernet communication interface.

	This value represents an Ethernet interface used for network communication. It is typically used for high-speed, reliable communication over IP networks.
INTERFACE_UNKOWN	Unknown interface. This value represents an unknown or undefined communication interface. It is typically used as a placeholder or default value when the interface type cannot be determined or is not yet set.

C:/Users/Mourya/source/repos/DLL_SBC/Et hernetInterface.cpp File Reference

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Classes | Macros

C:/Users/Mourya/sou rce/repos/DLL_SBC/EthernetInterface.h File Reference

Classes

class EthernetInterface

Ethernet communication interface implementation. More...

Macros

#define **EXPORT_API** __declspec(dllexport)

Macro Definition Documentation

◆ EXPORT_API

#define EXPORT_API __declspec(dllexport)

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C:/Users/Mourya/source/repos/DLL_SBC/U ARTInterface.cpp File Reference

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Classes | Macros

C:/Users/Mourya/sou rce/repos/DLL_SBC/UARTInterface.h File Reference

Classes

class **UARTInterface**

UART communication interface implementation. More...

Macros

#define **EXPORT_API** __declspec(dllexport)

Macro Definition Documentation

◆ EXPORT_API

#define EXPORT_API __declspec(dllexport)

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Here is a list of all file members with links to the files they belong to:

• EXPORT_API : CommunicationInterface.h, EthernetInterface.h, UARTInterface.h

• Group : devdefs.h

• HWVersion : devdefs.h

• InterfaceConnection : devdefs.h

InterfaceTests: devdefs.h
PBITTests: devdefs.h
VersionInfo: devdefs.h

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Here is a list of all enums with links to the files they belong to:

• Group : devdefs.h

• HWVersion : devdefs.h

• InterfaceConnection : devdefs.h

InterfaceTests : devdefs.hPBITTests : devdefs.h

• VersionInfo : devdefs.h

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Here is a list of all macros with links to the files they belong to:

• EXPORT_API : CommunicationInterface.h, EthernetInterface.h, UARTInterface.h

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CommunicationInterface Member List

This is the complete list of members for **CommunicationInterface**, including all inherited members.

Connect(const InterfaceConnection interfaceName, const BSTR con
Disconnect()=0

GetConnectionStatus(InterfaceConnection connectedInterfaceNam **GetHWVersion**(HWVersion *hwVersion) const =0

GetVersion(const VersionInfo enumVal, UINT32 *versionInfo) const : **RunTest**(const Group group, UINT32 subTest, BSTR *logOutput)=0 ~**CommunicationInterface**()=default

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EthernetInterface Member List

This is the complete list of members for **EthernetInterface**, including all inherited members.

Connect(const InterfaceConnection interfaceName, const BSTR ip, (
Disconnect() override

EthernetInterface()

GetConnectionStatus(InterfaceConnection connectedInterfaceNam **GetHWVersion**(HWVersion *hwVersion) const override

GetVersion(const VersionInfo enumVal, UINT32 *versionInfo) const (RunTest(const Group group, UINT32 subTest, BSTR *logOutput) ove

- ~CommunicationInterface()=default
- ~EthernetInterface()

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UARTInterface Member List

This is the complete list of members for **UARTInterface**, including all inherited members.

Connect(const InterfaceConnection interfaceName, const BSTR con
Disconnect() override

GetConnectionStatus(InterfaceConnection connectedInterfaceNam **GetHWVersion**(HWVersion *hwVersion) const override

GetVersion(const VersionInfo enumVal, UINT32 *versionInfo) const (**RunTest**(const Group group, UINT32 subTest, BSTR *logOutput) ove **UARTInterface**()

- ~CommunicationInterface()=default
- ~UARTInterface()

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