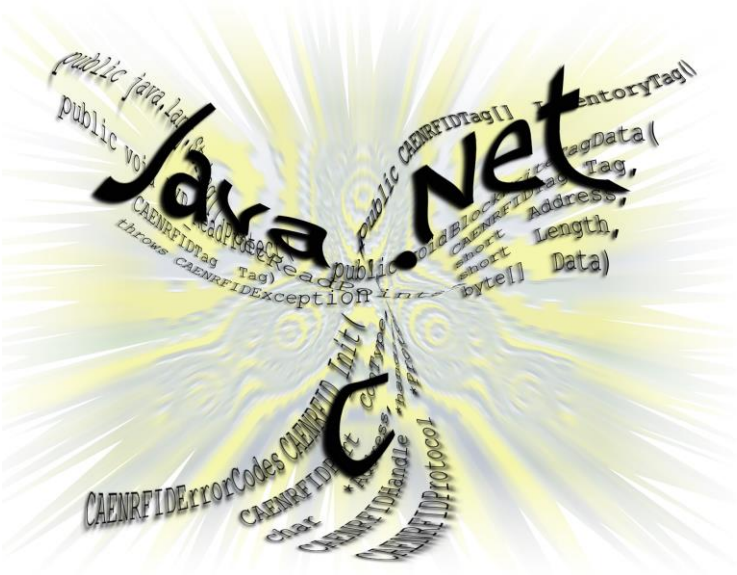
# CAEN RFID API

## Reference Manual




CAENRFID

**Reference Manual**

**Revision n. 09**

**03/07/2014**

**Visit SDK- Software Development Kit Web Page**
**and you will find the latest revision of manuals and software.**
**All you need to start using your SDK software in a few clicks!**

# Scope of Manual

This manual documents the API used by C, Java, Android and .Net programmers who want to write applications for controlling and using CAEN RFID readers.

# Change Document Record

| Date | Revision | Changes | Pages |
|---|---|---|---|
| 29 Jun 2010 | 01 | Initial release | - |
| 14 Jan 2011 | 02 | Corrected *GetTimeStamp Method*'s return value | 94 |
| | | Added Federal Communications Commission (FCC) Notice | 3 |
| 22 Mar 2011 | 03 | Added R1260U Reader in the declaration of Federal Communications Commission (FCC) note | 3 |
| 06 Sep 2011 | 04 | Added XPC field information | 13, 14, 32, 35, 72, 75, 72, 92, 95, 99 |
| 08 Aug 2012 | 05 | Added R4300P reader in the Federal Communications Commission (FCC) Notice (Preliminary) | 3 |
| 29 Nov 2012 | 06 | Added bit 5 (event trigger), bit 7 (match tag) and bit 8 (PC) in the tables *Flag value meaning* | 32, 35, 99 |
| | | Changed bit 1 and bit 2 description in the table *Flag value meaning* of the *InventoryTag Method* and *EventInventoryTag Method* | 32, 35, 99 |
| | | Added the following members in the *CAENRFIDBitRate Enumeration: DSB_ASK_M4_TX40RX256, PR_ASK_FM0_TX40RX640, PR_ASK_M4_TX40RX256, PR_ASK_M4_TX40RX320, PR_ASK_M4_TX80RX320* | 104 |
| | | Added *NXP_ChangeConfig Method* in the *LogicalSource Class* | 11, 47 |
| | | Added *SL900A_EndLog Method, SL900A_GetLogState Method, SL900A_GetSensorValue Method, SL900A_Initialize Method, SL900A_SetLogMode Method, SL900A_StartLog Method* in the *LogicalSource Class* | 11, 61÷66 |
| | | Added methods representation in Android language | 16÷119 |
| | | Removed the following methods: *Hitachi_BlockLock, Hitachi_BlockReadLock, Hitachi_GetSystemInformation, Hitachi_ReadLock, Hitachi_SetAttenuate, Hitachi_WriteMultipleWords*. See § *CAENRFID Obsolete Methods* chapter | 113÷119 |
| | | Removed the following methods: *Fujitsu_BurstErase, Fujitsu_BurstWrite, Fujitsu_ChgBlockGroupPassword, Fujitsu_ChgBlockLock, Fujitsu_ChgWordLock, Fujitsu_ReadBlockLock, Fujitsu_Refresh*. See § *CAENRFID Obsolete Methods* chapter | 113÷119 |
| | | Added *CAENRFIDLogicalSource.InventoryFlag Enumeration* | 15, 106 |
| | | Added overloaded *Connect Method.* | 76 |
| | | Added *IDSTagData Class* | 11, 14, 17÷18 |
| | | Added *PC* field information | 11, 32, 35, 72, 93, 99 |
| 19 Apr 2013 | 07 | Added PC field in C representation of CAENRFIDTag Class | 92 |
| | | Added *A528B Reader* in the declaration of Federal Communications Commission (FCC) note | 3 |
| 11 Sep 2013 | 08 | Added *CAENRFIDRFRegulations Enumeration* | 15, 109 |
| | | Added *CAENRFIDTag.MemBanks Enumeration* | 15, 112 |
| | | Added information about *SDK Web Page* | 2 |

| | | | |
|---|---|---|---|
| 03 Jul 2014 | 09 | Added *R1270 Quark Up and R1170I qIDmini Reader* in the declaration of Federal Communications Commission (FCC) note | 3 |

**CAEN RFID srl**

Via Vetraia, 11 55049 Viareggio (LU) - ITALY
Tel. +39.0584.388.398 Fax +39.0584.388.959
info@caenrfid.com
www.caenrfid.com

© CAEN RFID srl – 2010

**Disclaimer**

No part of this manual may be reproduced in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of CAEN RFID.

The information contained herein has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. CAEN RFID reserves the right to modify its products specifications without giving any notice; for up to date information please visit www.caenrfid.com.

**Federal Communications Commission (FCC) Notice** [1]

This device was tested and found to comply with the limits set forth in Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, the product may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at their own expense. The authority to operate this product is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by CAEN RFID.

[1] This declaration only applies to FCC readers A828US, A829US, A528, R1230CB, R1260I, R1260U, R4300P, A528B, R1240I, R1270, R1170I (Mod. WR1170IUAPLP and WR1170IUHIDP)

# Index


Scope of Manual ..... 2
Change Document Record ..... 2
**Index ..... 4**
**List of Tables ..... 6**
**1 Introduction ..... 7**
Overview on SDK ..... 8
Functions and methods names ..... 8
Error Handling ..... 8
Managing connections with the readers ..... 8
Return data mechanism ..... 9
Passing parameters to methods and functions ..... 9
**2 CAEN RFID API Structure ..... 10**
CAENRFID Classes ..... 11
CAENRFID Enumerations ..... 15
**3 Classes Description ..... 16**
CAENRFIDException Class ..... 17
getError Method ..... 17
IDSTagData Class ..... 17
getADError Method ..... 17
getRangeLimit Method ..... 18
getSensorValue Method ..... 18
CAENRFIDLogicalSource Class ..... 19
AddReadPoint Method ..... 19
BlockWriteTagData Method ..... 20
CustomCommand_EPC_C1G2 Method ..... 22
EventInventoryTag Method ..... 23
GetBufferedData Method ..... 24
GetDESB_ISO180006B Method ..... 24
GetName Method ..... 25
GetQ_EPC_C1G2 Method ..... 25
GetReadCycle Method ..... 26
GetSelected_EPC_C1G2 Method ..... 26
GetSession_EPC_C1G2 Method ..... 27
GetTarget_EPC_C1G2 Method ..... 27
GroupSelUnsel Method ..... 28
InventoryTag Method ..... 29
isReadPointPresent Method ..... 36
KillTag_EPC_C1G1 Method ..... 36
KillTag_EPC_C1G2 Method ..... 37
LockBlockPermaLock_EPC_C1G2 Method ..... 39
LockTag_EPC_C1G2 Method ..... 40
LockTag_ISO180006B Method ..... 43
NXP_ChangeEAS Method ..... 43
NXP_ChangeConfig Method ..... 44
NXP_EAS_Alarm Method ..... 45
NXP_ReadProtect Method ..... 45
NXP_ResetReadProtect Method ..... 46
NXP_ChangeConfig Method ..... 47
ProgramID_EPC_C1G1 Method ..... 48
ProgramID_EPC_C1G2 Method ..... 48
ProgramID_EPC119 Method ..... 49
Query_EPC_C1G2 Method ..... 50
QueryAck_EPC_C1G2 Method ..... 50
ReadBLockPermalock_EPC_C1G2 Method ..... 51
ReadTagData Method ..... 52
ReadTagData_EPC_C1G2 Method ..... 53
RemoveReadPoint Method ..... 57
ResetSession_EPC_C1G2 Method ..... 57
SetDESB_ISO180006B Method ..... 58
SetQ_EPC_C1G2 Method ..... 58
SetReadCycle Method ..... 59

SetSelected_EPC_C1G2 Method ....59
SetSession_EPC_C1G2 Method ....60
SetTarget_EPC_C1G2 Method ....60
SL900A_EndLog Method ....61
SL900A_GetLogState Method ....62
SL900A_GetSensorValue Method ....63
SL900A_Initialize Method ....64
SL900A_SetLogMode Method ....65
SL900A_StartLog Method ....66
WriteTagData Method ....67
WriteTagData_EPC_C1G2 Method ....68
CAENRFIDNotify Class ....72
getDate Method ....72
getPC Method ....72
getReadPoint Method ....73
getRSSI Method ....73
getStatus Method ....73
getTagID Method ....74
getTagLength Method ....74
getTagSource Method ....74
getTagType Method ....75
getTID Method ....75
getXPC Method ....75
CAENRFIDReader Class ....76
Connect Method ....76
Init Function ....77
Disconnect Method ....77
End ....77
GetBitRate Method ....78
GetFirmwareRelease Method ....78
GetIO Method ....79
GetIODirection Method ....79
GetLBTMode Method ....80
GetPower Method ....80
GetProtocol Method ....81
GetReaderInfo Method ....81
GetReadPoints Method ....82
GetReadPointStatus Method ....82
GetRFChannel Method ....83
GetRFRegulation Method ....83
GetSource Method ....84
GetSourceNames Method ....84
GetSources Method ....85
InventoryAbort Method ....85
RFControl Method ....85
SetBitRate Method ....86
SetDateTime Method ....86
SetIO Method ....87
SetIODIRECTION Method ....87
SetNetwork Method ....88
SetPower Method ....88
SetProtocol Method ....89
SetRFChannel Method ....89
SetRS232 Method ....90
CAENRFIDReaderInfo Class ....91
GetModel Method ....91
GetSerialNumber Method ....91
CAENRFIDTag Class ....92
GetId Method ....92
GetLength Method ....92
GetPC Method ....93
GetReadPoint Method ....93
GetRSSI Method ....93
GetSource Method ....94
GetTID Method ....94

GetTimeStamp Method....94
GetType Method....95
GetXPC Method....95
**4 Event Handling....96**
Event Handling....97
EventInventoryTag Method....98
InventoryAbort Method....99
C# Event Handling....100
CAENRFIDEventArgs Class....100
CAENRFIDEventHandler Delegate....100
CAENRFIDEvent Event....100
Java and Android Event Handling....101
CAENRFIDEvent Class....101
CAENRFIDEventListener Interface....101
addCAENRFIDEventListener....101
removeCAENRFIDEventListener....101
C Event Handling....102
CAENRFID_INVENTORY_CALLBACK....102
**5 Enumerations Description....103**
CAENRFIDBitRate Enumeration....104
CAENRFIDLogicalSourceConstants Enumeration....105
CAENRFIDLogicalSource.InventoryFlag Enumeration....106
CAENRFIDPort Enumeration....107
CAENRFIDProtocol Enumeration....107
CAENRFIDReadPointStatus Enumeration....108
CAENRFIDRFRegulations Enumeration....109
CAENRFIDRS232Constants Enumeration....110
CAENRFIDSelUnselOptions Enumeration....111
CAENRFIDTag.MemBanks Enumeration....112
**6 CAENRFID Obsolete Methods....113**
C# Obsolete Methods....114
C# Obsolete Members....115
Java and Android Obsolete Methods....115
C Obsolete Functions....117
C Obsolete Data Types....119

# List of Tables

Tab. 2.1: CAENRFID classes....11
Tab. 2.2: CAENRFID methods....14
Tab. 2.3: CAENRFID Enumerations....15
Tab. 6.1: C# Obsolete Methods....115
Tab. 6.2: C# Obsolete Members....115
Tab. 6.3: Java and Android Obsolete Methods....116
Tab. 6.4: C Obsolete Functions....118
Tab. 6.5: C Obsolete Data Types....119

# 1 Introduction

This Chapter gives basic information about CAENRFID Software Development Kit (SDK). It contains these topics:

- Overview on SDK
- Functions and methods names
- Error Handling
- Managing connections with the readers
- Return data mechanism
- Passing parameters to methods and functions

# Overview on SDK

CAEN RFID provides a Software Development Kit (SDK) aimed to facilitate the software developers in interfacing with its readers. The SDK provides Application Program Interfaces (API) for three programming languages: C, Java and J#/C#/Visual Basic .NET.

The functionalities and the behaviors exported by the libraries are exactly the same for all the languages but, due to the syntax differences between them, there are differences in the implementation of functions and methods. Java and .NET implementation are very similar because they are both Object Oriented environments while the C implementation differs more.

The Object Oriented implementation (Java and .NET) defines a set of classes that models the devices characteristics, the main one are the CAENRFIDReader class and the CAENRFIDLogicalSource class. The first one implements the main methods used to configure general readers' parameters like the output power, the link interface and so on, the latter provides the methods to be used in order to communicate with the RFID tags (tags detection, read and write commands and so on).

The C implementation, on the contrary, implements a set of data types (defined into the CAENRFIDTypes.h header file) and a list of functions (defined into the CAENRFIDLib.h header file) in order to obtain the same functionalities as the Java and .NET classes.

In the Object Oriented languages (C# and Java) there are some methods that return objects, these methods have no correspondent in C language.

Further details on .NET and Java APIs can be found into the CAEN RFID API User Manual.

The following paragraphs will denote the differences in functionality for the topics listed below:

- Functions and methods names
- Error Handling
- Managing connections with the readers
- Return data mechanism
- Passing parameters to methods and functions

# Functions and methods names

The functions and methods with the same functionalities have the same name in all languages. The only exceptions are due to the absence of the overloading feature in the C language: methods that are overloaded in Java and .NET are translated in a corresponding set of different functions in C.

Note: some methods and functions have changed name in the last revision of the API but older names are still functional to preserve backward compatibility (see § CAENRFID Obsolete Methods pag.113).

# Error Handling

Java and .NET language API handle error conditions using the exceptions mechanism: when a method encounters an error, an exception is thrown to the calling code. The API defines a proper class for the exception generated by its methods (CAENRFIDException) the origin of the error is represented inside the CAENRFIDException object as a string.

C language does not provide the exception mechanism so the errors are handled using the return value of the functions. Each C function returns a numeric error code that can be interpreted using the CAENRFIDErrorCodes enumeration. Since no exceptions are generated, the execution flow of the program is not interrupted by the errors so it is always suggested to check for error conditions in the code before to call other functions.

# Managing connections with the readers

Java and .NET languages allow to initiate and terminate the communication with the reader by means of two specific methods of the CAENRFIDReader objects. So, after an object of the class CAENRFIDReader is instantiated, the Connect method permits to start the communication with a reader while the Disconnect method permits to terminate the communication.

C language is not object oriented and the handling of the communication state is implemented using two functions. CAENRFID_Init is used to start the communication with a reader and to initialize all the library's internal data structures

needed in order to maintain the communication active. The function returns a "handle" (very similar to the handles used in managing files) that have to be used in any subsequent function calls relative to that reader. At the end of the operation, a call to the CAENRFID_End function permits to close the communication link and to free the internal data structures.

# Return data mechanism

As seen in the Error Handling paragraph, all the C functions return a numeric error codes. Due to that reason, functions that need to return data to the caller use output parameters. Output parameters for the C functions are highlighted in this reference manual by the underlined name in the formal parameter list.

Java and .NET languages use exception for the error handling so, typically, the data is returned to the caller using the return value of the methods.

# Passing parameters to methods and functions

There are differences in the parameters' lists between Java/.NET methods and C functions. Many of those differences are due to the implicit reference of the methods to their objects. This characteristic of object oriented languages is emulated in C functions using an additional explicit parameter. Methods belonging to CAENRFIDLogicalSource objects, for example, are emulated in C functions that accept SourceName parameters.

Other differences are due to the better handling of complex data types in Java and .NET languages. Arrays, for example, have implicit size in Java/.NET that permit to pass a single parameter to methods requiring this data type. In C functions, passing an array as a parameter, need to specify both the memory address of the array and its size explicitly.

# 2 CAEN RFID API Structure

This chapter describes CAEN RFID API Structure. It contains these topics:

- CAENRFID Classes
- CAENRFID Enumerations

# CAENRFID Classes

In .NET (henceforth C#), Java and Android languages, CAENRFID methods are divided into the following classes:

| Class | Description |
|---|---|
| **CAENRFIDEventArgs2** | This class defines the CAENRFID event arguments. |
| **CAENRFIDException** | This class defines the CAEN RFID exceptions. |
| **IDSTagData** | This class represents data returned by tags based on IDS Chip SL900A. |
| **CAENRFIDLogicalSource** | The CAENRFIDLogicalSource class is used to create logical source objects. Logical source objects represent an aggregation of read points (antennas). Operations on the tags are performed using the logical source methods. In addition to the methods used to operate on the tags, the logical source class exports methods to configure the anticollision algorithm and to configure the composition of the logical source itself. |
| **CAENRFIDNotify** | This class defines the structure of a notification message. |
| **CAENRFIDReader** | The CAENRFIDReader class is used to create reader objects which permit to access to CAEN RFID readers' configuration and control commands. |
| **CAENRFIDReaderInfo** | The CAENRFIDReaderInfo class is used to create reader info objects. Reader info objects represent the information about the reader device (model and serial number). |
| **CAENRFIDTag** | This class is used to define objects representing the tags. These objects are used as return value for the inventory methods and as arguments for many tag access methods. |

**Tab. 2.1: CAENRFID classes**

Each class contains the following methods:

| Methods | Description |
|---|---|
| **CAENRFIDEventArgs Class** | |
| getData | Returns the event object value. |
| **CAENRFIDException Class** | |
| getError | Gets the error string associated to the exception. |
| **CAENRFID IDSTagData Class** | |
| getADError | Gets the error status of the A/D. |
| getRangeLimit | Gets the range limit parameter. |
| getSensorValue | Gets the value obtained by the sensor. |
| **CAENRFIDLogicalSource Class** | |
| AddReadPoint | Adds a read point to the logical source. |
| BlockWriteTagData | Overloaded. This method can be used to write a portion of the user memory in an ISO18000-6B tag using blocks of four bytes for each command. |
| CustomCommand_EPC_C1G2 | Overloaded. This method can be used to issue a generic Custom command as defined by the EPC Class1 Gen2 protocol specification. The parameters are used to specify the type of the custom command and its parameters. |
| EventInventoryTag | A call to this method will start a sequence of read cycle on each read point linked to the logical source. The readings will be notified to the controller via event generation. |
| GetBufferedData | The function returns all the Tags stored in reader's memory using all the ReadPoints belonging to the Source. |
| GetDESB_ISO180006B | This method can be used to retrieve the Data Exchange Status Bit setting (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source. |
| GetName | Gets a string representing the name of the logical source. |
| GetQ_EPC_C1G2 | This method can be used to retrieve the current setting for the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |

[2] For the description of this class, see § Event Handling pag.107

| Methods | Description |
|---|---|
| GetReadCycle | Gets the current setting for the number of read cycles performed by the logical source during the inventory algorithm execution. |
| GetSelected_EPC_C1G2 | This method can be used to retrieve the Selected flag (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |
| GetSession_EPC_C1G2 | This method can be used to retrieve the Session setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |
| GetTarget_EPC_C1G2 | This method can be used to retrieve the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |
| GroupSelUnsel | This method can be used to send a Group Select/Unselect command to the tag (see ISO18000-6B protocol specification). |
| InventoryTag | Overloaded. A call to this method will execute a read cycle on each read point linked to the logical source. Depending on the air protocol setting it will execute the appropriate anticollision algorithm. |
| isReadPointPresent | Checks if a read point is present in the logical source. |
| KillTag_EPC_C1G1 | This method can be used to kill an EPC Class 1 Gen 1 tag. |
| KillTag_EPC_C1G2 | Overloaded. This method can be used to kill an EPC of an EPC Class 1 Gen 2 tag. |
| LockBlockPermaLock_EPC_C1G2 | This method implements the BLockPermaLock with ReadLock=1 as specified in EPCC1G2 rev. 1.2.0 protocol. |
| LockTag_EPC_C1G2 | Overloaded. This method can be used to lock a memory bank of an EPC Class 1 Gen 2 tag. |
| LockTag_ISO180006B | This method can be used to lock a byte in the memory of a ISO18000-6B tag. |
| NXP_ChangeEAS | This method can be used to issue a ChangeEAS custom command as defined by the NXP G2XM and G2XL datasheet after having put it in Secured state using the Access command. |
| NXP_ChangeConfig | Overloaded. This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet. |
| NXP_EAS_Alarm | This method can be used to issue an EAS_Alarm custom command as defined by the NXP G2XM and G2XL datasheet. |
| NXP_ReadProtect | Overloaded. This method can be used to issue a ReadProtect custom command as defined by the NXP G2XM and G2XL datasheet. |
| NXP_ResetReadProtect | This method can be used to issue a ResetReadProtect custom command as defined by the NXP G2XM and G2XL datasheet. |
| ProgramID_EPC_C1G1 | This method can be used to write the EPC of an EPC Class 1 Gen 1 tag. |
| ProgramID_EPC_C1G2 | Overloaded. This method can be used to write the EPC of an EPC Class 1 Gen 2 tag. |
| ProgramID_EPC119 | This method can be used to write the UID of an EPC 1.19 tag. |
| Query_EPC_C1G2 | This method make the reader generate an EPC Class1 Gen2 Query command. |
| QueryAck_EPC_C1G2 | This method make the reader generate a sequence of EPC Class1 Gen2 Query and Ack commands. It can be used to read a single tag under the field. If there are more than one tag under the field the method fails. |
| ReadBLockPermalock_EPC_C1G2 | This method implements the BLockPermaLock with ReadLock=0 as specified in EPCC1G2 rev. 1.2.0 protocol. |
| ReadTagData | This method can be used to read a portion of the user memory in a ISO18000-6B tag. |
| ReadTagData_EPC_C1G2 | Overloaded. This method can be used to read a portion of memory in a ISO18000-6C (EPC Class1 Gen2) tag. |
| RemoveReadPoint | Removes a read point from the logical source. |
| ResetSession_EPC_C1G2 | This method can be used to reset the Session status for EPC Class1 Gen2 tags. After the execution of this method all the tags in the field of the antennas belonging to this logical source are back in the default Session. |
| SetDESB_ISO180006B | This method can be used to set the Data Exchange Status Bit (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source. |
| SetQ_EPC_C1G2 | This method can be used to set the initial Q value (see EPC Class1 Gen2 |

| Methods | Description |
|---|---|
| | protocol specification) used by the anticollision algorithm when called on this logical source. |
| SetReadCycle | Sets the number of read cycles to be performed by the logical source during the inventory algorithm execution. |
| SetSelected_EPC_C1G2 | This method can be used to set the Session (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |
| SetSession_EPC_C1G2 | This method can be used to set the Session (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |
| SetTarget_EPC_C1G2 | This method can be used to set the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source. |
| SL900A_EndLog | This method can be used to issue an IDS SL900A EndLog custom command as defined in the IDS SL900A datasheet. |
| SL900A_GetLogState | This method can be used to issue an IDS SL900A GetLogState custom command as defined in the IDS SL900A datasheet. |
| SL900A_GetSensorValue | This method can be used to issue an IDS SL900A GetSensorValue custom command as defined in the IDS SL900A datasheet. |
| SL900A_Initialize | This method can be used to issue an IDS SL900A Initialize custom command as defined in the IDS SL900A datasheet. |
| SL900A_SetLogMode | This method can be used to issue an IDS SL900A SetLogMode custom command as defined in the IDS SL900A datasheet. |
| SL900A_StartLog | This method can be used to issue an IDS_SL900A StartLog custom command as defined in the IDS SL900A datasheet. |
| WriteTagData | This method can be used to write a portion of the user memory in a ISO18000-6B tag. |
| WriteTagData_EPC_C1G2 | Overloaded. This method can be used to write a portion of memory in a ISO18000-6C (EPC Class1 Gen2) tag. |
| **CAENRFIDNotify Class** | |
| getDate | Returns a timestamp representing the time at which the event was generated. |
| getPC | Returns the tag's PC code |
| getReadPoint | Returns the read point that has detected the tag. |
| getRSSI | Returns the RSSI value measured for the tag. |
| getStatus | Returns the event type associated to the tag. |
| getTagID | Returns the tag's ID (the EPC code in Gen2 tags). |
| getTagLength | Returns the tag's ID length. |
| getTagSource | Returns the name of the logical source that has detected the tag. |
| getTagType | Returns the air protocol of the tag. |
| getTID | Returns the TID field value in a EPC Class 1 Gen 2 Tag |
| getXPC | Returns the tag's XPC words. |
| **CAENRFIDReader Class** | |
| Connect | Overloaded. Starts the communication with the reader. It must be called before any other call to method of the CAENRFIDReader object. |
| Disconnect | Closes the connection with the CAEN RFID Reader releasing all the allocated resources. |
| GetBitRate | Gets the current setting of the RF bit rate. |
| GetFirmwareRelease | Permits to read the release of the firmware loaded into the device. |
| GetIO | Gets the current digital Input and Output lines status. |
| GetIODirection | Gets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines. |
| GetLBTMode | Gets the current LBT mode setting. If the current regulation is based on the frequency hopping mechanism it returns the FH status. |
| GetPower | Gets the current setting of the RF power expressed in mW. |
| GetProtocol | Gets the current air protocol of the Reader. |
| GetReaderInfo | Permits to read the reader information loaded into the device. |
| GetReadPoints | Gets the names of the read points (antennas) available in the reader. |
| GetReadPointStatus | Gets the CAENRFIDReadPointStatus object rapresenting the status of a read point (antenna). |

| Methods | Description |
|---|---|
| GetRFChannel | Gets the index of the RF channel currently in use. The index value meaning change for different country regulations. |
| GetRFRegulation | Gets the current RF regulation setting value. |
| GetSource | Gets a CAENRFIDLogicalSource object given its name |
| GetSourceNames | Gets the names of the logical sources available in the reader. |
| GetSources | Gets the CAENRFIDLogicalSource objects available on the reader. |
| InventoryAbort | Stops the EventInventoryTag execution. |
| RFControl Method | Permits to control the RF CW (Carrier Wave) signal generation. |
| SetBitRate | Sets the RF bit rate to use. |
| SetDateTime | Sets the Date/Time of the reader. |
| SetIO | Sets the Output lines value. |
| SetIODIRECTION | Sets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines. |
| SetNetwork | Permits to configure the network settings of the reader. In order to apply the changes the reader must be restarted. |
| SetPower | Sets the conducted RF power of the Reader. |
| SetProtocol | Set the air protocol of the reader. |
| SetRFChannel | Sets the RF channel to use. This method fixes the RF channel only when the listen before talk or the frequency hopping feature is disabled. |
| SetRS232 | Permits to change the serial port settings. Valid settings values depend on the reader model. |
| **CAENRFIDReaderInfo Class** | |
| GetModel | Gets the reader's model. |
| GetSerialNumber | Gets the reader's serial number. |
| **CAENRFIDTag Class** | |
| GetId | Returns the tag's ID (the EPC code in Gen2 tags). |
| GetLength | Returns the tag's ID length. |
| GetPC | Returns the tag's PC code |
| GetReadPoint | Returns the read point that has detected the tag. |
| GetRSSI | Returns the RSSI value measured for the tag. |
| GetSource | Returns the name of the logical source that has detected the tag. |
| GetTID | Returns the tag's TID (valid only for EPC Class 1 Gen 2 tags). |
| GetTimeStamp | Gets the Tag's TimeStamp. |
| GetType | Returns the air protocol of the tag. |
| GetXPC | Returns the tag's XPC words. |

**Tab. 2.2: CAENRFID methods**

# CAENRFID Enumerations

The following enumerations are present in C# language. They correspond to classes in Java language and to enumerations and data types in C language:

| Enumerations | Description |
|---|---|
| **BitRate** | Gives a list of the supported radiofrequency profiles. |
| **LogicalSourceConstants** | Gives a list of constants used for the configuration of the logical sources. Detailed explanation of the settings can be found in the EPC Class 1 Gen 2 and ISO 18000-6B specification documents. |
| **CAENRFIDLogicalSource.InventoryFlag** | Gives a list of constants used for the configuration of the inventory function. |
| **Port** | Gives a list of the communication ports supported by the CAEN RFID readers. |
| **Protocol** | Gives a list of the air protocol supported by the CAEN RFID readers. |
| **ReadPointStatus** | Gives a list of the possible ReadPoint status values. |
| **CAENRFIDRFRegulations** | The CAENRFIDRFRegulations gives a list of country radiofrequency regulations. |
| **RS232Constants** | Gives a list of settings for the serial port configuration. |
| **SelUnselOptions** | Gives a list of operations supported by the Group Select/Unselect command (valid only for the ISO18000-6B air protocol). |
| **CAENRFIDTag.MemBanks** | The CAENRFIDTag.MemBanks enumerates the bank name of a generic ISO18000-6C tag. |

**Tab. 2.3: CAENRFID Enumerations**

# 3 Classes Description

This chapter gives a description of CAENRFID methods divided into classes. It contains these topics:

- CAENRFIDException Class
- IDSTagData Class
- CAENRFIDLogicalSource Class
- CAENRFIDNotify Class
- CAENRFIDReader Class
- CAENRFIDReaderInfo Class
- CAENRFIDTag Class

# CAENRFIDException Class

The CAENRFIDException class defines the CAEN RFID exceptions.

## getError Method

*Description:*
This method gets the error string associated to the exception.

*Return value:*
The string representing the error.

*Syntax:*

*C# representation:*

```
public string                getError()
```

*Java and Android representation:*

```
public java.lang.String      getError()
```

*Remarks:*
This function does not exist in C language, see § Error Handling pag. 8 for more information.

# IDSTagData Class

This class represents data returned by tags based on IDS Chip SL900A.

In Java, Android and C# lanuguages this class is composed by methods while in C language is represented by a struct (for more information see § Overview on SDK pag.8):

*C representation:*

```
typedef struct {
                    BOOL                ADError_i;
                    unsigned int        RangeLimit_i;
                    unsigned int        SensorValue_i;
                    } CAENRFID_IDSTagData;
```

## getADError Method

*Description:*
This method returns if an A/D error is raised.

*Return value:*
True if an A/D error occurs, false otherwise.

*Syntax:*

*C# representation:*

```
public bool ADError     {
                        get;
                        }
```

*Java and Android representation:*

```
public boolean getADError()
```

## getRangeLimit Method

*Description:*
This method returns the range limit set on sensor.

*Return value:*
A bitmask representing the range limit.

*Syntax:*

*C# representation:*

```
public uint RangeLimit   {
                         get;
                         }
```

*Java and Android representation:*

```
public int getRangeLimit()
```

## getSensorValue Method

*Description:*
This method returns the sensor value.

*Return value:*
A bitmask representing the value obtained by the sensor.

*Syntax:*

*C# representation:*

```
public uint SensorValue  {
                         get;
                         }
```

*Java and Android representation:*

```
public int getSensorValue()
```

# CAENRFIDLogicalSource Class

The CAENRFIDLogicalSource class is used to create logical source objects. Logical source objects represent an aggregation of read points (antennas). Operations on the tags are performed using methods belonging to the logical source. In addition to the methods used to operate on the tags, the logical source class exports methods to configure the anticollision algorithm and to configure the composition of the logical source itself.

## AddReadPoint Method

*Description:*
This method adds a read point to the logical source.

*Parameters:*

| Name | Description |
|---|---|
| ReadPoint | A string representing the name of the read point (antenna). |

*Syntax:*

*C# representation:*

```
public void         AddReadPoint(
                              string              ReadPoint)
```

*Java and Android representation:*

```
public void         AddReadPoint(
                              java.lang.String    ReadPoint)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_AddReadPoint(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              char                *ReadPoint);
```

# BlockWriteTagData Method

## BlockWriteTagData Method (CAENRFIDTag, Int16, Int16, Byte[])

*Description:*

This method can be used to write a portion of the user memory in a ISO18000-6B tag using blocks of four bytes for each command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be written. |
| Address | The address where to start writing the data. |
| Length | The number of byte to be written. |
| Data | The data to be written into the tag's user memory. |

*Syntax:*

*C# representation:*

```
public void         BlockWriteTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Length,
                              byte[]              Data)
```

*Java and Android representation:*

```
public void         BlockWriteTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Length,
                              byte[]              Data)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BlockWriteTagData(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

### BlockWriteTagData Method (CAENRFIDTag, Int16, Int16, Int16, Byte[])

*Description:*

This method can be used to write a portion of the user memory in a ISO18000-6B tag using blocks of four bytes for each command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be written. |
| Address | The address where to start writing the data. |
| Mask | A bitmask that permit to select which of the four bytes have to be written (i.e. mask 0x05 write the bytes on position Address + 1 and Address + 3). |
| Length | The number of byte to be written. |
| Data | The data to be written into the tag's user memory. |

*Syntax:*

*C# representation:*

```
public void         BlockWriteTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Mask,
                              short               Length,
                              byte[]              Data)
```

*Java and Android representation:*

```
public void         BlockWriteTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Mask,
                              short               Length,
                              byte[]              Data)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_FilterBlockWriteTagData(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *ID,
                              int                 Address,
                              short               Mask,
                              int                 Length,
                              void                *Data);
```

# CustomCommand_EPC_C1G2 Method

## CustomCommand_EPC_C1G2 Method (CAENRFIDTag, Byte, Int16, Byte[], Int16)

*Description:*

This method can be used to issue a generic Custom command as defined by the EPC Class1 Gen2 protocol specification. The parameters are used to specify the type of the custom command and its parameters.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to which send the Custom command. |
| SubCmd | The SubCommand field of the Custom command. |
| TxLen | The length of the data to be sent to the tag. |
| Data | The data to be sent to the tag. |
| RxLen | The length of the data to be received by the tag. |

*Return value:*

An array of bytes representing the reply from the tag as specified by the custom command.

*Syntax:*

*C# representation:*

```
public byte[]       CustomCommand_EPC_C1G2(
                            CAENRFIDTag         Tag,
                            byte                SubCmd,
                            short               TxLen,
                            byte[]              Data,
                            short               RxLen)
```

*Java and Android representation:*

```
public byte[]       CustomCommand_EPC_C1G2(
                            CAENRFIDTag         Tag,
                            byte                SubCmd,
                            short               TxLen,
                            byte[]              Data,
                            short               RxLen)
                            throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_CustomCommand_EPC_C1G2(
                            CAENRFIDHandle      handle,
                            CAENRFIDTag         *Tag,
                            unsigned char       SubCmd,
                            int                 TxLen,
                            void                *Data,
                            int                 RxLen,
                            void                *TRData);
```

### CustomCommand_EPC_C1G2 Method (CAENRFIDTag, Byte, Int16, Byte[], Int16, Int32)

*Description:*

This method can be used to issue a generic Custom command as defined by the EPC Class1 Gen2 protocol specification. The parameters are used to specify the type of the custom command and its parameters. The Custom command is executed after an Access command to switch the tag in the Secured state using the provided password.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| SubCmd | The SubCommand field of the Custom command. |
| TxLen | The length of the data to be sent to the tag. |
| Data | The data to be sent to the tag. |
| RxLen | The length of the data to be received by the tag. |
| AccessPassword | The access password. |

*Return value:*

An array of bytes representing the reply from the tag as specified by the custom command.

*Syntax:*

*C# representation:*

```
public byte[]       CustomCommand_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              byte                SubCmd,
                              short               TxLen,
                              byte[]              Data,
                              short               RxLen,
                              int                 AccessPassword)
```

*JAVArepresentation:*

```
public byte[]       CustomCommand_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              byte                SubCmd,
                              short               TxLen,
                              byte[]              Data,
                              short               RxLen,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureCustomCommand_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              unsigned char       SubCmd,
                              int                 TxLen,
                              void                *Data,
                              int                 RxLen,
                              int                 AccessPassword,
                              void                *TRData);
```

## EventInventoryTag Method

For the description of this method, see § Event Handling pag.96.

## GetBufferedData Method

*Description:*
This method returns all the Tags stored in reader's buffer using all the ReadPoints belonging to the Source. Only on A828BT reader.

*Return value:*
An array of CAENRFIDTag objects detected.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag[]     GetBufferedData()
```

*Java and Android representation:*

```
public CAENRFIDTag[]     GetBufferedData()
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes       CAENRFID_GetBufferedData(
                               CAENRFIDHandle      handle,
                               char                *source,
                               CAENRFIDTag         **Receive,
                               int                 *Size);
```

## GetDESB_ISO180006B Method

*Description:*
This method can be used to retrieve the Data Exchange Status Bit setting (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source.

*Return value:*
The current DESB setting value.

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSourceConstants GetDESB_ISO180006B()
```

*Java and Android representation:*

```
public CAENRFIDLogicalSourceConstants GetDESB_ISO180006B()
                                      throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes                    GetDESB_ISO180006B(
                                      CAENRFIDHandle      handle,
                                      unsigned short      *Status);
```

## GetName Method

*Description:*
This method gets a string representing the name of the logical source.

*Return value:*
A string representing the name of the logical source.

*Syntax:*

*C# representation:*

```
public string           GetName()
```

*Java and Android representation:*

```
public java.lang.String  GetName()
```

*Remarks:*
This function does not exist in C language, see § Overview on SDK pag. 8 for more information.

## GetQ_EPC_C1G2 Method

*Description:*
This method can be used to retrieve the current setting for the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Return value:*
The current initial Q value setting.

*Syntax:*

*C# representation:*

```
public int          GetQ_EPC_C1G2()
```

*Java and Android representation:*

```
public int          GetQ_EPC_C1G2()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetQValue_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              int                 *Q);
```

## GetReadCycle Method

*Description:*
This method gets the current setting for the number of read cycles performed by the logical source during the inventory algorithm execution.
ReadCycle affects only inventory performed with continuos mode (see § *EventInventoryTag Method* pag. 23).

*Return value:*
The number of read cycles.

*Syntax:*

*C# representation:*

```
public int          GetReadCycle()
```

*Java and Android representation:*

```
public int          GetReadCycle()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetReadCycle(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              int                 *value);
```

## GetSelected_EPC_C1G2 Method

*Description:*
This method can be used to retrieve the Selected flag (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Return value:*
The current Selected value

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSourceConstants      GetSelected_EPC_C1G2()
```

*Java and Android representation:*

```
public CAENRFIDLogicalSourceConstants      GetSelected_EPC_C1G2()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetSelected_EPC_C1G2(
                              CAENRFIDHandle                  handle,
                              char                            *SourceName,
                              CAENRFIDLogicalSourceConstants  *value);
```

## GetSession_EPC_C1G2 Method

*Description:*
This method can be used to retrieve the Session setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Return value:*
The current Session value setting.

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSourceConstants      GetSession_EPC_C1G2()
```

*Java and Android representation:*

```
public CAENRFIDLogicalSourceConstants      GetSession_EPC_C1G2()
                                        throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetSession_EPC_C1G2(
                                CAENRFIDHandle                  handle,
                                char                            *SourceName,
                                CAENRFIDLogicalSourceConstants  *value);
```

## GetTarget_EPC_C1G2 Method

*Description:*
This method can be used to retrieve the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Return value:*
The current Target value setting.

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSourceConstants      GetTarget_EPC_C1G2()
```

*Java and Android representation:*

```
public CAENRFIDLogicalSourceConstants      GetTarget_EPC_C1G2()
                                        throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetTarget_EPC_C1G2(
                                CAENRFIDHandle                  handle,
                                char                            *SourceName,
                                CAENRFIDLogicalSourceConstants  *value);
```

## GroupSelUnsel Method

*Description:*
This method can be used to send a Group Select/Unselect command to the tag (see ISO18000-6B protocol specification).

*Parameters:*

| Name | Description |
|---|---|
| Code | The operation code as defined by the protocol. |
| Address | The Address from which start the comparison. |
| BitMask | The bit mask to use. |
| Data | The data to be compared. |

*Return value:*
The selected tag.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag      GroupSelUnsel(
                              CAENRFIDSelUnselOptions Code,
                              short               Address,
                              short               BitMask,
                              byte[]              Data)
```

*Java and Android representation:*

```
public CAENRFIDTag      GroupSelUnsel(
                              CAENRFIDSelUnselOptions Code,
                              short               Address,
                              short               BitMask,
                              byte[]              Data)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes      CAENRFID_GroupSelUnsel(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              CAENRFID_SelUnsel_Op Code,
                              int                 Address,
                              int                 BitMask,
                              void                *Data,
                              CAENRFIDTag         *Tag);
```

# InventoryTag Method

## InventoryTag Method ()

*Description:*

A call to this method will execute a read cycle on each read point linked to the logical source. Depending on the air protocol setting it will execute the appropriate anticollision algorithm.

*Return value:*

An array containing the CAENRFIDTag objects representing the tags read from the read points.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag[]     InventoryTag()
```

*Java and Android representation:*

```
public CAENRFIDTag[]     InventoryTag()
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes       CAENRFID_InventoryTag (
                               CAENRFIDHandle      handle,
                               char                *SourceName,
                               CAENRFIDTag         **Receive,
                               int                 *Size);
```

## InventoryTag Method (Byte[], Int16, Int16)

*Description:*

A call to this method will execute a read cycle on each read point linked to the logical source.

*Parameters:*

| Name | Description |
|---|---|
| Mask | A byte array representing the bitmask to apply. |
| MaskLength | A value representing the bit-oriented length of the bitmask. |
| Position | A value representing the first bit of ID where the match will start. |

*Return value:*

An array containing the CAENRFIDTag objects representing the tags read from the read points.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag[]     InventoryTag(
                               byte[]              Mask,
                               short               MaskLength,
                               short               Position)
```

*Java and Android representation:*

```
public CAENRFIDTag[]     InventoryTag(
                               byte[]              Mask,
                               short               MaskLength,
                               short               Position)
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_FilteredInventoryTag(
                               CAENRFIDHandle      handle,
                               char                *SourceName,
                               char                *Mask,
                               unsigned char       MaskLength,
                               unsigned char       Position,
                               CAENRFIDTag         **Receive,
                               int                 *Size);
```

*Remarks:*

Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performend on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method.

### InventoryTag Method (Byte[], Int16, Int16, Int16)

*Description:*

A call to this method will execute a read cycle on each read point linked to the logical source.

*Parameters:*

| Name | Description |
|---|---|
| Mask | A byte array representing the bitmask to apply. |
| MaskLength | A value representing the bit-oriented length of the bitmask. |
| Position | A value representing the first bit of ID where the match will start. |
| Flag | A bitmask representing the InventoryTag options. |

*Return value:*

An array containing the CAENRFIDTag objects representing the tags read from the read points.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag[]     InventoryTag(
                               byte[]              Mask,
                               short               MaskLength,
                               short               Position,
                               short               Flag)
```

*Java and Android representation:*

```
public CAENRFIDTag[]     InventoryTag(
                               byte[]              Mask,
                               short               MaskLength,
                               short               Position,
                               short               Flag)
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_FlagInventoryTag (
                               CAENRFIDHandle      handle,
                               char                *SourceName,
                               char                *Mask,
                               unsigned char       MaskLength,
                               unsigned char       Position,
                               unsigned char       Flag,
                               CAENRFIDTag         **Receive,
                               int                 *Size);
```

*Remarks:*
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performend on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method. The Flags parameter permits to set InventoryTag method's options.In this case bit 1 and 2 of the flag (continuos and framed mode) are ignored.

| **Flag value meaning** | |
|---|---|
| **Bit 0** | RSSI: a 1 value indicates that the reader will transmit the RSSI (Return Signal Strength Indicator) in the response. |
| **Bit 1** | Framed data: a 1 value indicates that the tag's data will be transmitted by the reader to the PC as soon as the tag is detected, a 0 value means that all the tags detected are buffered in the reader and trasmitted all together at the end of the inventory cycle. |
| **Bit 2** | Continuous acquisition: a 1 value indicates that the inventory cycle is repeated by the reader depending on the SetReadCycle setting value, a 0 value means that only one inventory cycle will be performed. If the continuous mode is selected a 0 value in the ReadCycle setting will instruct the reader to repeat the inventory cycle until an InventoryAbort method is invoked, a value X different from 0 means that the inventory cycle will be performed X times by the reader. |
| **Bit 3** | Compact data: a 1 value indicates that only the EPC of the tag will be returned by the reader, a 0 value indicates that the complete data will be returned. In case that the compact option is enabled all the other data will be populated by this library with fakes values. |
| **Bit 4** | TID reading: a 1 value indicates that also the TID of the tag will be returned by the reader together with the other information. |
| **Bit 5** | Event trigger: when this flag is set together with the continuous acquisition flag, the inventory cycle is performed in the same way of the continuous mode with the only difference that the inventory command is sent only by pressing the left key of the A828BT reader. |
| **Bit 6** | XPC: a 1 value allows the reader to get the XPC word if backscattered by a tag.Tags that do not backscatter the XPC words will return an XPC array with all the 4 bytes set to 0 |
| **Bit 7** | Match tag: a 1 value enables the matching of readed tags with a tag present in the memory (A828BT reader only). |
| **Bit 8** | PC: a 1 value allows the reader to return the PC of a Gen2 tag in addition to the ID (A828BT reader only). |

### InventoryTag Method (Int16, Byte[], Int16, Int16)

*Description:*

A call to this method will execute a read cycle on each read point linked to the logical source.

*Parameters:*

| Name | Description |
|---|---|
| bank | A value representing the memory bank where apply the filter. |
| Mask | A byte array representing the bitmask to apply. |
| MaskLength | A value representing the bit-oriented length of the bitmask. |
| Position | A value representing the first bit of ID where the match will start. |

*Return value:*

An array containing the CAENRFIDTag objects representing the tags read from the read points.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag[]     InventoryTag(
                                short               bank,
                                byte[]              Mask,
                                short               MaskLength,
                                short               Position)
```

*Java and Android representation:*

```
public CAENRFIDTag[]     InventoryTag(
                                short               bank,
                                byte[]              Mask,
                                short               MaskLength,
                                short               Position)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredInventoryTag (
                                CAENRFIDHandle      handle,
                                char                *SourceName,
                                short               bank,
                                short               Position,
                                short               MaskLength,
                                char                *Mask,
                                CAENRFIDTag         **Receive,
                                int                 *Size);
```

*Remarks:*

Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performend on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method.

### InventoryTag Method (Int16, Byte[], Int16, Int16, Int16)

*Description:*

A call to this method will execute a read cycle on each read point linked to the logical source.

*Parameters:*

| Name | Description |
|---|---|
| bank | A value representing the memory bank where apply the filter. |
| Mask | A byte array representing the bitmask to apply. |
| MaskLength | A value representing the bit-oriented length of the bitmask. |
| Position | A value representing the first bit of ID where the match will start. |
| Flag | A bitmask representing the InventoryTag options. |

*Return value:*

An array containing the CAENRFIDTag objects representing the tags read from the read points.

*Syntax:*

*C# representation:*

```
public CAENRFIDTag[]     InventoryTag(
                                short               bank,
                                byte[]              Mask,
                                short               MaskLength,
                                short               Position,
                                short               Flag)
```

*Java and Android representation:*

```
public CAENRFIDTag[]     InventoryTag(
                                short               bank,
                                byte[]              Mask,
                                short               MaskLength,
                                short               Position,
                                short               Flag)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredFlagInventoryTag (
                                CAENRFIDHandle      handle,
                                char                *SourceName,
                                short               bank,
                                short               Position,
                                short               MaskLength,
                                char                *Mask,
                                unsigned char       Flag,
                                CAENRFIDTag         **Receive,
                                int                 *Size);
```

*Remarks:*
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performend on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method. The Flags parameter permits to set InventoryTag method's options.In this case bit 1 and 2 of the flag (continuos and framed mode) are ignored.

| **Flag value meaning** | |
|---|---|
| **Bit 0** | RSSI: a 1 value indicates that the reader will transmit the RSSI (Return Signal Strength Indicator) in the response. |
| **Bit 1** | Framed data: a 1 value indicates that the tag's data will be transmitted by the reader to the PC as soon as the tag is detected, a 0 value means that all the tags detected are buffered in the reader and trasmitted all together at the end of the inventory cycle. |
| **Bit 2** | Continuous acquisition: a 1 value indicates that the inventory cycle is repeated by the reader depending on the SetReadCycle setting value, a 0 value means that only one inventory cycle will be performed. If the continuous mode is selected a 0 value in the ReadCycle setting will instruct the reader to repeat the inventory cycle until an InventoryAbort method is invoked, a value X different from 0 means that the inventory cycle will be performed X times by the reader. |
| **Bit 3** | Compact data: a 1 value indicates that only the EPC of the tag will be returned by the reader, a 0 value indicates that the complete data will be returned. In case that the compact option is enabled all the other data will be populated by this library with fakes values. |
| **Bit 4** | TID reading: a 1 value indicates that also the TID of the tag will be returned by the reader together with the other information. |
| **Bit 5** | Event trigger: when this flag is set together with the continuous acquisition flag, the inventory cycle is performed in the same way of the continuous mode with the only difference that the inventory command is sent only by pressing the left key of the A828BT reader. |
| **Bit 6** | XPC: a 1 value allows the reader to get the XPC word if backscattered by a tag.Tags that do not backscatter the XPC words will return an XPC array with all the 4 bytes set to 0 |
| **Bit 7** | Match tag: a 1 value enables the matching of readed tags with a tag present in the memory (A828BT reader only). |
| **Bit 8** | PC: a 1 value allows the reader to return the PC of a Gen2 tag in addition to the ID (A828BT reader only). |

## FreeTagsMemory

*Description:*
The function permits to free the allocated memory by CAENRFID_InventoryTag.
Unlike the C#/Java languages where objects are automatically destroyed by the Runtime Environment, in C language it is necessary to esplicitly deallocate the memory allocated by the identified tags. To do that, the FreeTagsMemory function is available, passing the pointer to the identified tags list.

*Parameters:*

| Name | Description |
|---|---|
| Tags | tags array returned by one of the inventory family function. |

*Syntax:*

*C representation:*

```
void                CAENRFID_FreeTagsMemory(
                                CAENRFIDTag         **Tags);
```

## isReadPointPresent Method

*Description:*
This method checks if a read point is present in the logical source.

*Parameters:*

| Name | Description |
|---|---|
| ReadPoint | A string representing the name of the read point (antenna). |

*Return value:*
A boolean value representing the presence of a read point in the logical source (true means that it is present, false if it is not present).

*Syntax:*

*C# representation:*

```
public bool         isReadPointPresent(
                              string              ReadPoint)
```

*Java and Android representation:*

```
public boolean      isReadPointPresent(
                              java.lang.String    ReadPoint)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_isReadPointPresent(
                              CAENRFIDHandle      handle,
                              char                *ReadPoint,
                              char                *SourceName,
                              short               *isPresent);
```

## KillTag_EPC_C1G1 Method

*Description:*
This method can be used to kill a EPC Class 1 Gen 1 tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be killed. |
| Password | The tag's kill password. |

*Syntax:*

*C# representation:*

```
public void         KillTag_EPC_C1G1(
                              CAENRFIDTag         Tag,
                              short               Password)
```

*Java and Android representation:*

```
public void         KillTag_EPC_C1G1(
                              CAENRFIDTag         Tag,
                              short               Password)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_KillTag_EPC_C1G1(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              char                Password);
```

# KillTag_EPC_C1G2 Method

## KillTag_EPC_C1G2 Method (CAENRFIDTag, Int32)

*Description:*

This method can be used to kill a EPC Class 1 Gen 2 tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be killed. |
| Password | The tag's kill password. |

*Syntax:*

*C# representation:*

```
public void         KillTag_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              int                 Password)
```

*Java and Android representation:*

```
public void         KillTag_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              int                 Password)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_KillTag_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Password);
```

### KillTag_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int32)

*Description:*

This method can be used to kill a EPC Class 1 Gen 2 tag.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identificantion. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| Password | The tag's kill password. |

*Syntax:*

*C# representation:*

```
public void         KillTag_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              int                 Password)
```

*Java and Android representation:*

```
public void         KillTag_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              int                 Password)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredKillTag_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              char                *Mask,
                              int                 Password);
```

## LockBlockPermaLock_EPC_C1G2 Method

*Description:*
This method implements the BLockPermaLock with ReadLock=1 as specified in EPC C1G2 rev. 1.2.0 protocol.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be written. |
| MemBank | The memory bank where to write the data. |
| BlockPtr | The address where to start writing the data. |
| BlockRange | The number of word of the mask. |
| Mask | A bitmask that permit to select which of the four bytes have to be locked (i.e. mask 0x05 write the bytes on position Address + 1 and Address + 3). |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         LockBlockPermaLock_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               BlockPtr,
                              short               BlockRange,
                              byte[]              Mask,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         LockBlockPermaLock_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               BlockPtr,
                              short               BlockRange,
                              byte[]              Mask,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_LockBlockPermaLock_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               MemBank,
                              short               BlockPtr,
                              short               BlockRange,
                              byte[]              Mask,
                              int                 AccessPassword);
```

# LockTag_EPC_C1G2 Method

## LockTag_EPC_C1G2 Method (CAENRFIDTag, Int32)

*Description:*

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be locked. |
| Payload | The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification. |

*Syntax:*

*C# representation:*

```
public void         LockTag_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              int                 Payload)
```

*Java and Android representation:*

```
public void         LockTag_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              int                 Payload)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_LockTag_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Payload);
```

## LockTag_EPC_C1G2 Method (CAENRFIDTag, Int32, Int32)

*Description:*

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag after having put it in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be locked. |
| Payload | The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification. |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         LockTag_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              int                 Payload,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         LockTag_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              int                 Payload,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureLockTag_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Payload,
                              int                 AccessPassword);
```

### LockTag_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int32)

*Description:*

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identificantion. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| Payload | The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification. |

*Syntax:*

*C# representation:*

```
public void         LockTag_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              int                 Payload)
```

*Java and Android representation:*

```
public void         LockTag_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              int                 Payload)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredLockTag_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              char                *Mask,
                              int                 Payload);
```

### LockTag_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int32, Int32)

*Description:*

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag after having put it in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identification. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| Payload | The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification. |
| AccessPassword | Access password. |

*Syntax:*

*C# representation:*

```
public void         LockTag_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              int                 Payload,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         LockTag_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              int                 Payload,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureBankFilteredLockTag_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              char                *Mask,
                              int                 Payload,
                              int                 AccessPassword);
```

## LockTag_ISO180006B Method

*Description:*
This method can be used to lock a byte in the memory of a ISO18000-6B tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be locked. |
| Address | The byte's address to lock. |

*Syntax:*

*C# representation:*

```
public void         LockTag_ISO180006B(
                              CAENRFIDTag         Tag,
                              short               Address)
```

*Java and Android representation:*

```
public void         LockTag_ISO180006B(
                              CAENRFIDTag         Tag,
                              short               Address)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_LockTag_ISO180006B(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               Address);
```

## NXP_ChangeEAS Method

*Description:*
This method can be used to issue a ChangeEAS custom command as defined by the NXP G2XM and G2XL datasheet after having put it in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| EAS | A boolean representing the EAS state to set. |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         NXP_ChangeEAS(
                              CAENRFIDTag         Tag,
                              bool                EAS,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         NXP_ChangeEAS(
                              CAENRFIDTag         Tag,
                              boolean             EAS,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureChangeEAS(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              char                EAS,
                              int                 AccessPassword);
```

# NXP_ChangeConfig Method

## NXP_ChangeConfig Method (CAENRFIDTag, UInt16)

*Description:*

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| ConfigWord | The configuration word. |

*Syntax:*

*C# representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              ushort              ConfigWord)
```

*Java and Android representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              short               ConfigWord)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_ChangeConfig(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               ConfigWord,
                              char                *TRData);
```

## NXP_ChangeConfig Method (CAENRFIDTag, UInt16, Int32)

*Description:*

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet after having put it in Secured state using the Access Password.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| ConfigWord | The configuration word. |
| Password | The access password. |

*Syntax:*

*C# representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              ushort              ConfigWord,
                              int                 Password)
```

*Java and Android representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              short               ConfigWord,
                              int                 Password)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureChangeConfig(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               ConfigWord,
                              char                *TRData,
                              int                 SecurePassword);
```

## NXP_EAS_Alarm Method

*Description:*
This method can be used to issue a EAS_Alarm custom command as defined by the NXP G2XM and G2XL datasheet.

*Return value:*
An array of bytes representing the EAS Code.

*Syntax:*

*C# representation:*

```
public byte[]       NXP_EAS_Alarm()
```

*Java and Android representation:*

```
public byte[]       NXP_EAS_Alarm()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_EAS_Alarm(
                              CAENRFIDHandle      handle,
                              char                *TRData);
```

## NXP_ReadProtect Method

### NXP_ReadProtect Method (CAENRFIDTag)

*Description:*
This method can be used to issue a ReadProtect custom command as defined by the NXP G2XM and G2XL datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |

*Syntax:*

*C# representation:*

```
public void         NXP_ReadProtect(
                              CAENRFIDTag         Tag)
```

*Java and Android representation:*

```
public void         NXP_ReadProtect(
                              CAENRFIDTag         Tag)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_ReadProtect(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag);
```

### NXP_ReadProtect Method (CAENRFIDTag, Int32)

*Description:*

This method can be used to issue a ReadProtect custom command as defined by the NXP G2XM and G2XL datasheet after having put it in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         NXP_ReadProtect(
                              CAENRFIDTag         Tag,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         NXP_ReadProtect(
                              CAENRFIDTag         Tag,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureReadProtect(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 AccessPassword);
```

## NXP_ResetReadProtect Method

*Description:*

This method can be used to issue a ResetReadProtect custom command as defined by the NXP G2XM and G2XL datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to reset the read protection. |
| Password | The ReadProtect password. |

*Syntax:*

*C# representation:*

```
public void         NXP_ResetReadProtect(
                              CAENRFIDTag         Tag,
                              int                 Password)
```

*Java and Android representation:*

```
public void         NXP_ResetReadProtect(
                              CAENRFIDTag         Tag,
                              int                 Password)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_ResetReadProtect(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Password);
```

# NXP_ChangeConfig Method

## NXP_ChangeConfig Method (CAENRFIDTag, UInt16)

*Description:*

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| ConfigWord | The Configuration word. |

*Syntax:*

*C# representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              ushort ConfigWord)
```

*Java and Android representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              short               ConfigWord)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_ChangeConfig(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               ConfigWord,
                              char                *TRData);
```

## NXP_ChangeConfig Method (CAENRFIDTag, UInt16, Int32)

*Description:*

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet after having put it in Secured state using the Access Password.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag object representing the tag to select. |
| ConfigWord | The Configuration word. |
| Password | The access password. |

*Syntax:*

*C# representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              ushort              ConfigWord,
                              int                 Password)
```

*Java and Android representation:*

```
public void         NXP_ChangeConfig(
                              CAENRFIDTag         Tag,
                              short               ConfigWord,
                              int                 Password)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureChangeConfig(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               ConfigWord,
                              char                *TRData)
                              int                 SecurePassword);
```

## ProgramID_EPC_C1G1 Method

*Description:*
This method can be used to write the EPC of a EPC Class 1 Gen 1 tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be programmed, the ID contained in this object will be programmed into the tag. |
| Password | The password needed in order to write into the tag. |
| Lock | A flag used to lock the EPC in the tag (1 if the EPC have to be locked). |

*Syntax:*

*C# representation:*

```
public void         ProgramID_EPC_C1G1(
                              CAENRFIDTag         Tag,
                              short               Password,
                              bool                Lock)
```

*Java and Android representation:*

```
public void         ProgramID_EPC_C1G1(
                              CAENRFIDTag         Tag,
                              short               Password,
                              boolean             Lock)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ProgramID_EPC_C1G1(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              char                Password,
                              unsigned short      Lock);
```

## ProgramID_EPC_C1G2 Method

### ProgramID_EPC_C1G2 Method (CAENRFIDTag, Int16)

*Description:*
This method can be used to write the EPC of a EPC Class 1 Gen 2 tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be programmed, the ID contained in this object will be programmed into the tag. |
| NSI | The Numbering System Identifier as defined in EPC Class 1 Gen 2 protocol specifications. |

*Syntax:*

*C# representation:*

```
public void         ProgramID_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               NSI)
```

*Java and Android representation:*

```
public void         ProgramID_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               NSI)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ProgramID_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              unsigned short      NSI);
```

### ProgramID_EPC_C1G2 Method (CAENRFIDTag, Int16, Int32)

*Description:*
This method can be used to write the EPC of a EPC Class 1 Gen 2 tag after having put it in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be programmed, the ID contained in this object will be programmed into the tag. |
| NSI | The Numbering System Identifier as defined in EPC Class 1 Gen 2 protocol specifications. |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         ProgramID_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               NSI,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         ProgramID_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               NSI,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureProgramID_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              unsigned short      NSI,
                              int                 AccessPassword);
```

## ProgramID_EPC119 Method

*Description:*
This method can be used to write the UID of a EPC 1.19 tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be programmed. |
| NewID | An array of bytes representing the new UID for the tag. |

*Syntax:*

*C# representation:*

```
public void         ProgramID_EPC119(
                              CAENRFIDTag         Tag,
                              byte[]              NewID)
```

*Java and Android representation:*

```
public void         ProgramID_EPC119(
                              CAENRFIDTag         Tag,
                              byte[]              NewID)
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ProgramID_EPC119(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              char                *NewID);
```

## Query_EPC_C1G2 Method

*Description:*
This method makes the reader generate a EPC Class1 Gen2 Query command.

*Return value:*
True on successfull completion.

*Syntax:*

*C# representation:*

```
public bool         Query_EPC_C1G2()
```

*Java and Android representation:*

```
public boolean      Query_EPC_C1G2()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_Query_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               *isPresent);
```

## QueryAck_EPC_C1G2 Method

*Description:*
This method make the reader generate a sequence of EPC Class1 Gen2 Query and Ack commands. It can be used to read a single tag under the field. If there are more than one tag under the field the method fails.

*Return value:*
An array of bytes representing the EPC of the tag

*Syntax:*

*C# representation:*

```
public byte[]       QueryAck_EPC_C1G2()
```

*Java and Android representation:*

```
public byte[]       QueryAck_EPC_C1G2()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  QueryAck_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              byte                *Tag);
```

## ReadBLockPermalock_EPC_C1G2 Method

*Description:*
This method implements the BLockPermaLock with ReadLock=0 as specified in EPCC1G2 rev. 1.2.0 protocol.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be read. |
| MemBank | The memory bank where to read the data. |
| Blockptr | The address where to start reading the data. |
| BlockRange | The number of word to be read. |
| AccessPassword | The access password. |

*Return value:*
An array of bytes representing the data read from the tag.

*Syntax:*

*C# representation:*

```
public byte[]       ReadBLockPermalock_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Blockptr,
                              short               BlockRange,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public byte[]       ReadBLockPermalock_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Blockptr,
                              short               BlockRange,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ReadBLockPermalock_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               MemBank,
                              short               Blockptr,
                              short               BlockRange,
                              int                 AccessPassword)
```

## ReadTagData Method

*Description:*
This method can be used to read a portion of the user memory in a ISO18000-6B tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be read. |
| Address | The address where to start reading the data. |
| Length | The number of byte to be read. |

*Return value:*
An array of bytes representing the data read from the tag.

*Syntax:*

*C# representation:*

```
public byte[]       ReadTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Length)
```

*Java and Android representation:*

```
public byte[]       ReadTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Length)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ReadTagData(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

# ReadTagData_EPC_C1G2 Method

## ReadTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16)

*Description:*

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be read. |
| MemBank | The memory bank where to read the data. |
| Address | The address where to start reading the data. |
| Length | The number of byte to be read. |

*Return value:*

An array of bytes representing the data read from the tag.

*Syntax:*

*C# representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length)
```

*Java and Android representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ReadTagData_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

### ReadTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16, Int32)

*Description:*

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag after having put the tag in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be read. |
| MemBank | The memory bank where to read the data. |
| Address | The address where to start reading the data. |
| Length | The number of byte to be read. |
| AccessPassword | The access password. |

*Return value:*

An array of bytes representing the data read from the tag.

*Syntax:*

*C# representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureReadTagData_EPC_C1G2 (
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              int                 AccessPassword,
                              void                *Data);
```

### ReadTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16)

*Description:*

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag. In this case the target tag is identified by 'LenghtMask' bytes of passed mask placed in a memory bank 'BankMask' at 'PositionMask' byte from bank starting address byte.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identificantion. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| MemBank | Memory bank where read. |
| Address | Address where starts reading. |
| Length | Number of byte to read. |

*Return value:*

An array of bytes representing the data read from the tag.

*Syntax:*

*C# representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              short               MemBank,
                              short               Address,
                              short               Length)
```

*Java and Android representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              short               MemBank,
                              short               Address,
                              short               Length)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredReadTagData_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              char                *Mask,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

### ReadTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16, Int32)

*Description:*

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag. In this case the target tag is identified by 'LenghtMask' bytes of passed mask placed in a memory bank 'BankMask' at 'PositionMask' byte from bank starting address byte. This is the secure version using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identificantion. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| MemBank | Memory bank where read. |
| Address | Address where starts reading. |
| Length | Number of byte to read. |
| AccessPassword | Access Password. |

*Return value:*

An array of bytes representing the data read from the tag.

*Syntax:*

*C# representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                                short               BankMask,
                                short               PositionMask,
                                short               LengthMask,
                                byte[]              Mask,
                                short               MemBank,
                                short               Address,
                                short               Length,
                                int                 AccessPassword)
```

*Java and Android representation:*

```
public byte[]       ReadTagData_EPC_C1G2(
                                short               BankMask,
                                short               PositionMask,
                                short               LengthMask,
                                byte[]              Mask,
                                short               MemBank,
                                short               Address,
                                short               Length,
                                int                 AccessPassword)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureBankFilteredReadTagData_EPC_C1G2 (
                                CAENRFIDHandle      handle,
                                char                *SourceName,
                                short               BankMask,
                                short               PositionMask,
                                short               LengthMask,
                                byte[]              Mask,
                                short               MemBank,
                                int                 Address,
                                int                 Length,
                                void                *Data,
                                int                 AccessPassword);
```

## RemoveReadPoint Method

*Description:*
This method removes a read point from the logical source.

*Parameters:*

| Name | Description |
|---|---|
| ReadPoint | A string representing the name of the read point (antenna). |

*Syntax:*

*C# representation:*

```
public void         RemoveReadPoint(
                              string              ReadPoint)
```

*Java and Android representation:*

```
public void         RemoveReadPoint(
                              java.lang.String    ReadPoint)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_RemoveReadPoint(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              char                *ReadPoint);
```

## ResetSession_EPC_C1G2 Method

*Description:*
This method can be used to reset the Session status for EPC Class1 Gen2 tags. After the execution of this method all the tags in the field of the antennas belonging to this logical source are back in the default Session.

*Syntax:*

*C# representation:*

```
public void         ResetSession_EPC_C1G2()
```

*Java and Android representation:*

```
public void         ResetSession_EPC_C1G2()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_ResetSession_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName);
```

## SetDESB_ISO180006B Method

*Description:*
This method can be used to set the Data Exchange Status Bit (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source.

*Parameters:*

| Name | Description |
|---|---|
| Value | The DESB setting value. |

*Syntax:*

*C# representation:*

```
public void         SetDESB_ISO180006B(
                              CAENRFIDLogicalSourceConstants   Value)
```

*Java and Android representation:*

```
public void         SetDESB_ISO180006B(
                              CAENRFIDLogicalSourceConstants   Value)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetDESB_ISO180006B(
                              CAENRFIDHandle                   handle,
                              unsigned int                     Value);
```

## SetQ_EPC_C1G2 Method

*Description:*
This method can be used to set the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Parameters:*

| Name | Description |
|---|---|
| Value | The initial Q value setting. |

*Syntax:*

*C# representation:*

```
public void         SetQ_EPC_C1G2(
                              int                 Value)
```

*Java and Android representation:*

```
public void         SetQ_EPC_C1G2(
                              int                 Value)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetQValue_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              int                 Value);
```

## SetReadCycle Method

*Description:*
This method sets the number of read cycles to be performed by the logical source during the inventory algorithm execution.

*Parameters:*

| Name | Description |
|---|---|
| value | The number of read cycles. |

*Syntax:*

*C# representation:*

```
public void         SetReadCycle(
                              int                 value)
```

*Java and Android representation:*

```
public void         SetReadCycle(
                              int                 value)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetReadCycle(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              int                 value);
```

## SetSelected_EPC_C1G2 Method

*Description:*
This method can be used to set the Selected flag (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Parameters:*

| Name | Description |
|---|---|
| Value | The Selected flag value. |

*Syntax:*

*C# representation:*

```
public void         SetSelected_EPC_C1G2(
                              CAENRFIDLogicalSourceConstants   Value)
```

*Java and Android representation:*

```
public void         SetSelected_EPC_C1G2(
                              CAENRFIDLogicalSourceConstants   Value)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetSelected_EPC_C1G2(
                              CAENRFIDHandle                   handle,
                              char                             *SourceName,
                              CAENRFIDLogicalSourceConstants   Value);
```

## SetSession_EPC_C1G2 Method

*Description:*
This method can be used to set the Session (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Parameters:*

| Name | Description |
|---|---|
| Value | The Session value. |

*Syntax:*

*C# representation:*

```
public void         SetSession_EPC_C1G2(
                              CAENRFIDLogicalSourceConstants   Value)
```

*Java and Android representation:*

```
public void         SetSession_EPC_C1G2(
                              CAENRFIDLogicalSourceConstants   Value)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetSession_EPC_C1G2(
                              CAENRFIDHandle                   handle,
                              char                             *SourceName,
                              CAENRFIDLogicalSourceConstants   Value);
```

## SetTarget_EPC_C1G2 Method

*Description:*
This method can be used to set the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

*Parameters:*

| Name | Description |
|---|---|
| Value | The Target value. |

*Syntax:*

*C# representation:*

```
public void         SetTarget_EPC_C1G2(
                              CAENRFIDLogicalSourceConstants   Value)
```

*Java and Android representation:*

```
public void         SetTarget_EPC_C1G2(
                              CAENRFIDLogicalSourceConstants   Value)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetTarget_EPC_C1G2(
                              CAENRFIDHandle                   handle,
                              char                             *SourceName,
                              CAENRFIDLogicalSourceConstants   Value);
```

## SL900A_EndLog Method

*Description:*
This method can be used to issue an IDS SL900A EndLog custom command as defined in the IDS SL900A datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The tag where stop the log |

*Syntax:*

*C# representation:*

```
public void         SL900A_EndLog(
                              CAENRFIDTag         Tag)
```

*Java and Android representation:*

```
public void         SL900A_EndLog(
                              CAENRFIDTag         Tag)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_EndLog(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag);
```

## SL900A_GetLogState Method

*Description:*
This method can be used to issue an IDS SL900A Get Log State custom command as defined in the IDS SL900A datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The tag selected |
| ShelfLife | This parameter is used to inform the reader if the shelf life flag is set in the tag's EEPROM |

*Return Value:*
This method returns the status of the logging process. The structure of the byte array is the following:
byte[0]÷byte[1] : Limite Counter.
byte[2]÷byte[3] : System status.
byte[4]÷byte[11] : Shelf Life Block (only if the ShelfLife parameter is true).
byte[12]÷byte[14] : Current Shelf Life (only if the ShelfLife parameter is true).
byte[15] : Status Flags (if ShelfLife parameter is false this byte follows immediately the System status word).

*Syntax:*

*C# representation:*

```
public byte[]       SL900A_GetLogState(
                              CAENRFIDTag         Tag,
                              bool                ShelfLife)
```

*Java and Android representation:*

```
public byte[]       SL900A_GetLogState(
                              CAENRFIDTag         Tag,
                              boolean             ShelfLife)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  IDS_SL900A_GetLogState(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              BOOL                ShelfLife,
                              char                * TRData);
```

## SL900A_GetSensorValue Method

*Description:*
This method can be used to issue an IDS SL900A Get Sensor Value custom command as defined in the IDS SL900A datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The tag to extract sensor data. |
| SensorType | Describes which sensor to choose.(see remark) |

*Return Value:*
Returns an IDSTagData object containing all the data read from the tag's selected sensor.

*Syntax:*

*C# representation:*

```
public IDSTagData   SL900A_GetSensorValue(
                                CAENRFIDTag             Tag,
                                byte                    SensorType)
```

*Java and Android representation:*

```
public IDSTagData   SL900A_GetSensorValue(
                                CAENRFIDTag             Tag,
                                byte                    SensorType)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_GetSensorValue(
                                CAENRFIDHandle          handle,
                                CAENRFIDTag             *Tag,
                                byte                    SensorType,
                                CAENRFID_IDSTagData     *IDSTagData);
```

*Remarks:*
According to the IDS SL900A datasheet, the Sensor Type byte is composed as:
bit 07..02: Extreme Lower
bit 01..00: Sensor Type.
Sensor type bits can be:
00: Temperature sensor
01: External sensor 1.
10: External sensor 2.
11: Battery Voltage.

## SL900A_Initialize Method

*Description:*
This method can be used to issue an IDS SL900A Initialize custom command as defined in the IDS SL900A datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The tag to initialize |
| DelayTime | The DelayTime parameter. See the IDS SL900A datasheet for further details. |
| ApplicationData | The Application data. See the IDS SL900A datasheet for further details. |

*Syntax:*

*C# representation:*

```
public void         SL900A_Initialize(
                              CAENRFIDTag         Tag,
                              ushort              DelayTime,
                              ushort              ApplicationData)
```

*Java and Android representation:*

```
public void         SL900A_Initialize(
                              CAENRFIDTag         Tag,
                              short               DelayTime,
                              short               ApplicationData)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_Initialize(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              unsigned short      DelayTime,
                              unsigned short      ApplicationData);
```

*Remarks:*
According to the IDS SL900A datasheet, the DelayTime parameter is composed as:
bit 15..4: Delay time (expressed in seconds)
bit 3..2: RFU
bit 1: Delay mode (0 : Internal timer, 1 : External switch)
bit 0: IRQ + Timer Enable
According to the IDS SL900A datasheet, the Application Data parameter is composed as:
bit 15..7: Application Area size (in words)
bit 6..3: RFU bit 2..0 : Broken word pointer.

## SL900A_SetLogMode Method

*Description:*
This method can be used to issue an IDS SL900A Set Log Mode custom command as defined in the IDS SL900A datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The tag to set log mode on. |
| LogMode | The LogMode parameter. See the IDS SL900A datasheet for further details. |

*Syntax:*

*C# representation:*

```
public void         SL900A_SetLogMode(
                                CAENRFIDTag         Tag,
                                uint                LogMode)
```

*Java and Android representation:*

```
public void         SL900A_SetLogMode(
                                CAENRFIDTag         Tag,
                                int                 LogMode)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_SetLog(
                                CAENRFIDHandle      handle,
                                CAENRFIDTag         *Tag,
                                unsigned int        LogMode);
```

*Remarks:*
According to the IDS SL900A datasheet, the DelayTime parameter is composed as:
bit 31..24: RFU.
bit 23..21: Logging Form.
bit 20: Storage Rule.
bit 19: Ext1 sensor enable.
bit 18: Ext2 sensor enable.
bit 17: Temperature sensor enable.
bit 16: Battery Check enable.
bit 15..0: Log Interval.
bit 0: RFU.

## SL900A_StartLog Method

*Description:*
This method can be used to issue an IDS SL900A Start Log custom command as defined in the IDS SL900A datasheet.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The Tag where start logging. |
| StartTime | The start time. See remark for structures. |

*Syntax:*

*C# representation:*

```
public void         SL900A_StartLog(
                              CAENRFIDTag         Tag,
                              uint                StartTime)
```

*Java and Android representation:*

```
public void         SL900A_StartLog(
                              CAENRFIDTag         Tag,
                              int                 StartTime)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_StartLog(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              unsigned int        StartTime);
```

*Remarks:*
According to the IDS SL900A datasheet, the StartTime parameter is composed as:
bit 31..26: Year
bit 25..21: Month
bit 15..11: Hour
bit 10.. 6: Minute
bit 5.. 0: Second.

## WriteTagData Method

*Description:*
This method can be used to write a portion of the user memory in an ISO18000-6B tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be written. |
| Address | The address where to start writing the data. |
| Length | The number of byte to be written. |
| Data | The data to be written into the tag's user memory. |

*Syntax:*

*C# representation:*

```
public void         WriteTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Length,
                              byte[]              Data)
```

*Java and Android representation:*

```
public void         WriteTagData(
                              CAENRFIDTag         Tag,
                              short               Address,
                              short               Length,
                              byte[]              Data)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_WriteTagData(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

# WriteTagData_EPC_C1G2 Method

## WriteTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16, Byte[])

*Description:*

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be written. |
| MemBank | The memory bank where to write the data. |
| Address | The address where to start writing the data. |
| Length | The number of byte to be written. |
| Data | An array of bytes representing the data to be written into the tag. |

*Syntax:*

*C# representation:*

```
public void         WriteTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data)
```

*Java and Android representation:*

```
public void         WriteTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_WriteTagData_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

### WriteTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16, Byte[], Int32)

*Description:*

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag after having put the tag in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| Tag | The CAENRFIDTag representing the tag to be written. |
| MemBank | The memory bank where to write the data. |
| Address | The address where to start writing the data. |
| Length | The number of byte to be written. |
| Data | An array of bytes representing the data to be written into the tag. |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         WriteTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         WriteTagData_EPC_C1G2(
                              CAENRFIDTag         Tag,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureWriteTagData_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              CAENRFIDTag         *Tag,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              void                *Data,
                              int                 AccessPassword);
```

### WriteTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16, Byte[])

*Description:*

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identificantion. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| MemBank | The memory bank where to write the data. |
| Address | The address where to start writing the data. |
| Length | The number of byte to be written. |
| Data | An array of bytes representing the data to be written into the tag. |

*Syntax:*

*C# representation:*

```
public void         WriteTagData_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data)
```

*Java and Android representation:*

```
public void         WriteTagData_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredWriteTagData_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              char                *Mask,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              void                *Data);
```

### WriteTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16, Byte[], Int32)

*Description:*

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag after having put the tag in Secured state using the Access command.

*Parameters:*

| Name | Description |
|---|---|
| BankMask | Memory bank for tag identificantion. |
| PositionMask | Bit position (from the start of the selected bank) where apply the mask to match. |
| LengthMask | Length of the mask. |
| Mask | Mask of byte. |
| MemBank | The memory bank where to write the data. |
| Address | The address where to start writing the data. |
| Length | The number of byte to be written. |
| Data | An array of bytes representing the data to be written into the tag. |
| AccessPassword | The access password. |

*Syntax:*

*C# representation:*

```
public void         WriteTagData_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data,
                              int                 AccessPassword)
```

*Java and Android representation:*

```
public void         WriteTagData_EPC_C1G2(
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              byte[]              Mask,
                              short               MemBank,
                              short               Address,
                              short               Length,
                              byte[]              Data,
                              int                 AccessPassword)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SecureBankFilteredWriteTagData_EPC_C1G2(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              short               BankMask,
                              short               PositionMask,
                              short               LengthMask,
                              char                *Mask,
                              short               MemBank,
                              int                 Address,
                              int                 Length,
                              void                *Data,
                              int                 AccessPassword);
```

# CAENRFIDNotify Class

The CAENRFIDNotify class defines the structure of a notification message.

In Java, Android and C# lanuguages this class is composed by methods while in C language is present as a struct (for more information see § Overview on SDK pag.8):

*C representation:*

```
typedef struct {
                    byte                ID[MAX_ID_LENGTH];
                    short               Length;
                    char                LogicalSource[MAX_LOGICAL_SOURCE_NAME];
                    char                ReadPoint[MAX_READPOINT_NAME];
                    CAENRFIDProtocol    Type;
                    short               RSSI;
                    byte                TID[MAX_TID_SIZE];
                    short               TIDLen;
                    byte                XPC[XPC_LENGTH];
                    byte                PC[PC_LENGTH];
} CAENRFIDNotify;
```

## getDate Method

*Description:*
This method returns a timestamp representing the time at which the event was generated.

*Return value:*
The timestamp value.

*Syntax:*

*C# representation:*

```
public DateTime             getDate()
```

*Java and Android representation:*

```
public java.util.Date       getDate()
```

## getPC Method

*Description:*
This method represents the PC code in the tag.

*Return value:*
The tag's Protocol Control code.

*Syntax:*

*C# representation:*

```
public byte[]           getPC()
```

*Java and Android representation:*

```
public byte[]           getPC()
```

## getReadPoint Method

*Description:*
This method returns the read point that has detected the tag.

*Return value:*
The name of the read point that has detected the Tag.

*Syntax:*

*C# representation:*

```
public string                   getReadPoint()
```

*Java and Android representation:*

```
public java.lang.String         getReadPoint()
```

## getRSSI Method

*Description:*
This method returns the RSSI value measured for the tag.

*Return value:*
The tag's RSSI.

*Syntax:*

*C# representation:*

```
public short                    getRSSI()
```

*Java and Android representation:*

```
public short                    getRSSI()
```

## getStatus Method

*Description:*
This method returns the event type associated to the tag.

*Return value:*
The event type associated to the Tag.

*Syntax:*

*C# representation:*

```
public CAENRFIDTagEventType     getStatus()
```

*Java and Android representation:*

```
public CAENRFIDTagEventType     getStatus()
```

## getTagID Method

*Description:*
This method returns the tag's ID (the EPC code in Gen2 tags).

*Return value:*
An array of bytes representing the tag's ID (the EPC code in EPC Class 1 Gen 2 tags).

*Syntax:*

*C# representation:*

```
public byte[]                   getTagID()
```

*Java and Android representation:*

```
public byte[]                   getTagID()
```

## getTagLength Method

*Description:*
This method returns the tag's ID length.

*Return value:*
The tag's length.

*Syntax:*

*C# representation:*

```
public short                    getTagLength()
```

*Java and Android representation:*

```
public short                    getTagLength()
```

## getTagSource Method

*Description:*
This method returns the name of the logical source that has detected the tag.

*Return value:*
The name of the logical source that has detected the tag.

*Syntax:*

*C# representation:*

```
public string                   getTagSource()
```

*Java and Android representation:*

```
public java.lang.String         getTagSource()
```

## getTagType Method

*Description:*
This method returns the air protocol of the tag.

*Return value:*
The air protocol of the tag.

*Syntax:*

*C# representation:*

```
public short                    getTagType()
```

*Java and Android representation:*

```
public CAENRFIDProtocol         getTagType()
```

## getTID Method

*Description:*
This method returns the TID field value in a EPC Class 1 Gen 2 Tag

*Return value:*
The bytes of the TID field.

*Syntax:*

*C# representation:*

```
public byte[]                   getTID()
```

*Java and Android representation:*

```
public java.lang.String         getAntenna()
```

## getXPC Method

*Description:*
This method returns the tag's XPC words.

*Return value:*
The tag's XPC words.

*Syntax:*

*C# representation:*

```
public byte[]             getXPC()
```

*Java and Android representation:*

```
public byte[]             getXPC()
```

# CAENRFIDReader Class

The CAENRFIDReader class is used to create reader objects which permit to access to CAEN RFID readers' configuration and control commands.

## Connect Method

### Connect Method (CAENRFIDPort, string

*Description:*

In C# and Java languages, this method starts the communication with the reader. It must be called before any other call to method of the CAENRFIDReader object. See § Managing connections with the readers pag. 8 for more information. For android bluetooth connection see below § *Connect Method (BluetoothSocket)*

*Parameters:*

| Name | Description |
|---|---|
| ConType | The communication link to use for the connection. |
| Address | Depending on ConType parameter: IP address for TCP/IP communications ("xxx.xxx.xxx.xxx"), COM port for RS232 communications ("COMx"), An index for USB communications (not yet supported). |

*Syntax:*

*C# representation:*

```
public void         Connect(
                              CAENRFIDPort        ConType,
                              string              Address)
```

*Java and Android representation:*

```
public void         Connect(
                              CAENRFIDPort        ConType,
                              java.lang.String    Address)
                              throws CAENRFIDException
```

### Connect Method (BluetoothSocket)

*Description:*

Start the andorid SPP bluetooth communication with the CAEN RFID Reader. This method must be called before any other methods of the Reader object.

*Parameters:*

| Name | Description |
|---|---|
| BTSock | The BluetoothSocket to read/write data. |

*Syntax:*

*Android representation:*

```
public void         Connect(
                              BluetoothSocket BTSock)
                              throws CAENRFIDException
```

*Remarks*

The BTSock parameter must be obtained trought a createRfcommSocketToServiceRecord(UUID uuid) call.
The standard UUID for the Serial Port Profile is 00001101-0000-1000-8000-00805F9B34FB.

## Init Function

*Description:*
In C language, this function generates an opaque handle to identify a module attached to the PC. See § Managing connections with the readers pag. 8 for more information.

*Parameters:*

| Name | Description |
|---|---|
| ConType | The communication link to use for the connection. |
| Address | Communication address (i.e.: "COM1" for RS232, "USB0" for USB of IP address for TCP/IP etc.). |
| handle | The handle that identifies the device. |

*Syntax:*

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_Init(
                              CAENRFIDPort        ConType,
                              char                *Address,
                              CAENRFIDHandle      *handle,
                              CAENRFIDProtocol    *Protocol);
```

## Disconnect Method

*Description:*
In C# and Java languages, this method closes the connection with the CAEN RFID Reader releasing all the allocated resources. See § Managing connections with the readers pag. 8 for more information.

*Syntax:*

*C# representation:*

```
public void         Disconnect()
```

*Java and Android representation:*

```
public void         Disconnect()
                              throws CAENRFIDException
```

## End

*Description:*
In C language, this function closes the connection with the CAEN RFID Reader releasing all the allocated resources. See § Managing connections with the readers pag. 8 for more information.

*Parameters:*

| Name | Description |
|---|---|
| handle | The handle that identifies the device. |

*Syntax:*

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_End(
                              CAENRFIDHandle      handle);
```

## GetBitRate Method

*Description:*
This method gets the current setting of the RF bit rate.

*Return value:*
The current RF bit rate value.

*Syntax:*

*C# representation:*

```
public CAENRFIDBitRate   GetBitRate()
```

*Java and Android representation:*

```
public CAENRFIDBitRate   GetBitRate()
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes       CAENRFID_GetBitrate(
                               CAENRFIDHandle      handle,
                               CAENRFID_Bitrate    *Bitrate);
```

## GetFirmwareRelease Method

*Description:*
This method permits to read the release of the firmware loaded into the device.

*Return value:*
A string representing the firmware release of the device.

*Syntax:*

*C# representation:*

```
public string            GetFirmwareRelease()
```

*Java and Android representation:*

```
public java.lang.String  GetFirmwareRelease()
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes       CAENRFID_GetFirmwareRelease(
                               CAENRFIDHandle      handle,
                               char                *FWRel);
```

## GetIO Method

*Description:*
This method gets the current digital Input and Output lines status.

*Return value:*
A bitmask representing the I/O lines status. The format and the meaning of the bits depend on the Reader's model. Please refer to the corresponding user manual available at www.caenrfid.com.

*Syntax:*

*C# representation:*

```
public int          GetIO()
```

*Java and Android representation:*

```
public int          GetIO()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetIO(
                              CAENRFIDHandle      handle,
                              unsigned int        *IORegister);
```

## GetIODirection Method

*Description:*
This method gets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines.

*Return value:*
A bitmask representing the I/O setting.

*Syntax:*

*C# representation:*

```
public int          GetIODirection()
```

*Java and Android representation:*

```
public int          GetIODirection()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetIODirection(
                              CAENRFIDHandle      handle,
                              unsigned int        *IODirection);
```

## GetLBTMode Method

*Description:*
This method gets the current LBT mode setting. If the current regulation is based on the frequency hopping mechanism it returns the FH status.

*Return value:*
A zero value if the LBT/FH is disabled, non-zero value if it is enabled.

*Syntax:*

*C# representation:*

```
public short        GetLBTMode()
```

*Java and Android representation:*

```
public short        GetLBTMode()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetLBTMode(
                              CAENRFIDHandle      handle,
                              unsigned short      *LBTMode);
```

## GetPower Method

*Description:*
This method gets the current setting of the RF power expressed in mW.

*Return value:*
The current conducted RF power expressed in mW.

*Syntax:*

*C# representation:*

```
public int          GetPower()
```

*Java and Android representation:*

```
public int          GetPower()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetPower(
                              CAENRFIDHandle      handle,
                              unsigned int        *Power);
```

## GetProtocol Method

*Description:*
This method gets the current air protocol of the Reader.

*Return value:*
A CAENRFIDProtocol representing the current air protocol set on the reader.

*Syntax:*

*C# representation:*

```
public CAENRFIDProtocol  GetProtocol()
```

*Java and Android representation:*

```
public CAENRFIDProtocol  GetProtocol()
                               throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes       CAENRFID_GetProtocol(
                               CAENRFIDHandle      handle,
                               CAENRFIDProtocol    *Protocol);
```

## GetReaderInfo Method

*Description:*
This method permits to read the reader information loaded into the device.

*Return value:*
The reader information of the device.

*Syntax:*

*C# representation:*

```
public CAENRFIDReaderInfo     GetReaderInfo()
```

*Java and Android representation:*

```
public CAENRFIDReaderInfo     GetReaderInfo()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes            CAENRFID_GetReaderInfo(
                                    CAENRFIDHandle      handle,
                                    char                *Model,
                                    char                *SerialNum);
```

## GetReadPoints Method

*Description:*
This method gets the names of the read points (antennas) available in the reader.

*Return value:*
An array containing the read points (antennas) names available in the reader.

*Syntax:*

*C# representation:*

```
public string[]                GetReadPoints()
```

*Java and Android representation:*

```
public java.lang.String[]      GetReadPoints()
```

*C representation:*

```
CAENRFIDErrorCodes             CAENRFID_GetReadPoints(
                                      CAENRFIDHandle      handle,
                                      char                **AntNames [],
                                      int                 *AntNumber);
```

## GetReadPointStatus Method

*Description:*
This method gets the CAENRFIDReadPointStatus object representing the status of a read point (antenna).

*Parameters:*

| Name | Description |
|---|---|
| ReadPoint | The name of the read point to check. |

*Return value:*
The CAENRFIDReadPointStatus object rapresenting the current status of the read point.

*Syntax:*

*C# representation:*

```
public CAENRFIDReadPointStatus       GetReadPointStatus(
                                     string              ReadPoint)
```

*Java and Android representation:*

```
public CAENRFIDReadPointStatus       GetReadPointStatus(
                                     java.lang.String    ReadPoint)
                                     throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes                   CAENRFID_GetReadPointStatus(
                                     CAENRFIDHandle      handle,
                                     char                *ReadPoint,
                                     CAENRFIDReadPointStatus *Status);
```

## GetRFChannel Method

*Description:*
This method gets the index of the RF channel currently in use. The index value meaning changes for different country regulations.

*Return value:*
The RF channel index.

*Syntax:*

*C# representation:*

```
public short        GetRFChannel()
```

*Java and Android representation:*

```
public short        GetRFChannel()
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_GetRFChannel(
                              CAENRFIDHandle      handle,
                              unsigned short      *RFChannel);
```

*Remarks*
This method is only used for testing applications.

## GetRFRegulation Method

*Description:*
This method gets the current RF regulation setting value.

*Return value:*
The RF regulation value.

*Syntax:*

*C# representation:*

```
public CAENRFIDRFRegulations  GetRFRegulation()
```

*Java and Android representation:*

```
public CAENRFIDRFRegulations  GetRFRegulation()
                                    throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes            CAENRFID_GetRFRegulation(
                                    CAENRFIDHandle            handle,
                                    CAENRFIDRFRegulations *RFRegulation);
```

## GetSource Method

*Description:*
This method gets a CAENRFIDLogicalSource object given its name.

*Parameters:*

| Name | Description |
|---|---|
| Source | The name of the logical source. |

*Return value:*
The CAENRFIDLogicalSource object corresponding to the requested name.

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSource  GetSource(
                                      string              Source)
```

*Java and Android representation:*

```
public CAENRFIDLogicalSource  GetSource(
                                      java.lang.String    Source)
                                      throws CAENRFIDException
```

*Remarks:*
This function does not exist in C language, see § Overview on SDK pag. 8 for more information.

## GetSourceNames Method

*Description:*
This method gets the names of the logical sources available in the reader.

*Return value:*
An array containing the logical source names available in the reader.

*Syntax:*

*C# representation:*

```
public static string[]              GetSourceNames()
```

*Java and Android representation:*

```
public static java.lang.String[]    GetSourceNames()
```

*C representation:*

```
CAENRFIDErrorCodes                  CAENRFID_GetSourceNames(
                                    CAENRFIDHandle      handle,
                                    char                **SrcNames[],
                                    int                 *SrcNumber);
```

## GetSources Method

*Description:*
This method gets the CAENRFIDLogicalSource objects available on the reader.

*Return value:*
An array of the logical source objects available in the Reader.

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSource[]       GetSources()
```

*Java and Android representation:*

```
public CAENRFIDLogicalSource[]       GetSources()
```

*Remarks:*
This function does not exist in C language, see § Overview on SDK pag. 8 for more information.

## InventoryAbort Method

For the description of this method, see § Event Handling pag.96.

## RFControl Method

*Description:*
Permits to control the RF CW (Carrier Wave) signal generation.

*Parameters:*

| Name | Description |
|---|---|
| OnOff | The value to set. 1 generates the CW , 0: stops the CW generation. |

*Syntax:*

*C# representation:*

```
public void         RFControl(
                              int                 OnOff)
```

*Java and Android representation:*

```
public void         RFControl(
                              int                 OnOff)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_RFControl(
                              CAENRFIDHandle      handle,
                              int                 OnOff);
```

*Remarks*
This method is only used for testing applications.

## SetBitRate Method

*Description:*
This method sets the RF bit rate to use.

*Parameters:*

| Name | Description |
|---|---|
| BitRate | The RF bit rate value to be set. |

*Syntax:*

*C# representation:*

```
public void         SetBitRate(
                              CAENRFIDBitRate     BitRate)
```

*Java and Android representation:*

```
public void         SetBitRate(
                              CAENRFIDBitRate     BitRate)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetBitRate(
                              CAENRFIDHandle      handle,
                              CAENRFID_Bitrate    BitRate);
```

## SetDateTime Method

*Description:*
This method sets the Date/Time of the reader.

*Parameters:*

| Name | Description |
|---|---|
| DateTime | The Date/Time to be set on the reader as a string in the format: "yyyy-mm-dd hh:mm:ss". |

*Syntax:*

*C# representation:*

```
public void         SetDateTime(
                              string              DateTime)
```

*Java and Android representation:*

```
public void         SetDateTime(
                              java.lang.String    DateTime)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetDateTime(
                              CAENRFIDHandle      handle,
                              char                *DateTime);
```

## SetIO Method

*Description:*
This method sets the Output lines value.

*Parameters:*

| Name | Description |
|---|---|
| IOValue | A bitmask representing the I/O lines value. The format and the meaning of the bits depend on the reader's model. Please refer to the corresponding user manual available on www.caenrfid.com |

*Syntax:*

*C# representation:*

```
public void         SetIO(
                                int                 IOValue)
```

*Java and Android representation:*

```
public void         SetIO(
                                int                 IOValue)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetIO(
                                CAENRFIDHandle      handle,
                                unsigned int        IOValue);
```

## SetIODIRECTION Method

*Description:*
This method sets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines.

*Parameters:*

| Name | Description |
|---|---|
| IODirection | The IODirection value to set. |

*Syntax:*

*C# representation:*

```
public void         SetIODIRECTION(
                                int                 IODirection)
```

*Java and Android representation:*

```
public void         SetIODIRECTION(
                                int                 IODirection)
                                throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetIODirection(
                                CAENRFIDHandle      handle,
                                unsigned int        IODirection);
```

## SetNetwork Method

*Description:*
This method permits to configure the network settings of the reader. In order to apply the changes the reader must be restarted.

*Parameters:*

| Name | Description |
|---|---|
| IPAddress | The IP address to set on the reader network interface. |
| NetMask | The netmask to set on the reader network interface. |
| Gateway | The gateway to set on the reader network interface. |

*Syntax:*

*C# representation:*

```
public void         SetNetwork(
                              string              IPAddress,
                              string              NetMask,
                              string              Gateway)
```

*Java and Android representation:*

```
public void         SetNetwork(
                              java.lang.String    IPAddress,
                              java.lang.String    NetMask,
                              java.lang.String    Gateway)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetNetwork(
                              CAENRFIDHandle      handle,
                              char                *IPAddress,
                              char                *NetMask,
                              char                *Gateway);
```

## SetPower Method

*Description:*
This method sets the conducted RF power of the Reader.

*Parameters:*

| Name | Description |
|---|---|
| power | The conducted RF power value expressed in mW. |

*Syntax:*

*C# representation:*

```
public void         SetPower(
                              int                 power)
```

*Java and Android representation:*

```
public void         SetPower(
                              int                 power)
                                    throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetPower(
                              CAENRFIDHandle      handle,
                              unsigned int        Power);
```

## SetProtocol Method

*Description:*
This method sets the air protocol of the reader.

*Parameters:*

| Name | Description |
|---|---|
| Protocol | The CAENRFIDProtocol representing the air protocol to be set. |

*Syntax:*

*C# representation:*

```
public void         SetProtocol(
                              CAENRFIDProtocol    Protocol)
```

*Java and Android representation:*

```
public void         SetProtocol(
                              CAENRFIDProtocol    Protocol)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetProtocol(
                              CAENRFIDHandle      handle,
                              CAENRFIDProtocol    Protocol);
```

## SetRFChannel Method

*Description:*
This method sets the RF channel to use. This method fixes the RF channel only when the listen before talk or the frequency hopping feature is disabled.

*Parameters:*

| Name | Description |
|---|---|
| Channel | The RF channel index to be set. |

*Syntax:*

*C# representation:*

```
public void         SetRFChannel(
                              short               Channel)
```

*Java and Android representation:*

```
public void         SetRFChannel(
                              short               Channel)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetRFChannel(
                              CAENRFIDHandle      handle,
                              unsigned short      Channel);
```

*Remarks*
This method is only used for testing applications.

## SetRS232 Method

*Description:*
This method permits to change the serial port settings. Valid settings values depend on the reader model.

*Parameters:*

| Name | Description |
|---|---|
| baud | The baud rate value to set. |
| datab | The number of data bits to set. |
| stopb | The number of stop bits to set. |
| parity | The parity value to set. |
| flowc | The flow control value to set. |

*Syntax:*

*C# representation:*

```
public void         SetRS232(
                              int                         baud,
                              int                         datab,
                              int                         stopb,
                              CAENRFIDRS232Constants      parity,
                              CAENRFIDRS232Constants      flowc)
```

*Java and Android representation:*

```
public void         SetRS232(
                              int                         baud,
                              int                         datab,
                              int                         stopb,
                              CAENRFIDRS232Constants      parity,
                              CAENRFIDRS232Constants      flowc)
                              throws CAENRFIDException
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_SetRS232(
                              CAENRFIDHandle              handle,
                              unsigned long               baud,
                              unsigned long               datab,
                              unsigned long               stopb,
                              CAENRFID_RS232_Parity       parity,
                              CAENRFID_RS232_FlowControl  flowc);
```

# CAENRFIDReaderInfo Class

The CAENRFIDReaderInfo class is used to create reader info objects. Reader info objects represent the information about the reader device (model and serial number).

## GetModel Method

*Description:*
This method gets the reader's model.

*Return value:*
The reader's model.

*Syntax:*

*C# representation:*

```
public string                GetModel()
```

*Java and Android representation:*

```
public java.lang.String      GetModel()
```

*Remarks:*
This method does not exist in C language. It is possible to use the *GetReaderInfo Method* pag. 81 instead. In fact *GetReaderInfo Method* (in the C language) returns the reader's model and the serial number.

## GetSerialNumber Method

*Description:*
This method gets the reader's serial number.

*Return value:*
The reader's serial number.

*Syntax:*

*C# representation:*

```
public string                GetSerialNumber()
```

*Java and Android representation:*

```
public java.lang.String      GetSerialNumber()
```

*Remarks:*
This method does not exist in C language. It is possible to use the *GetReaderInfo Method* pag. 81 instead. In fact *GetReaderInfo Method* (in the C language) returns the reader's model and the serial number.

# CAENRFIDTag Class

The CAENRFIDTag class is used to define objects representing the tags. These objects are used as return values for the inventory methods and as arguments for many tag access methods.

In both Java and C# lanuguage this class is composed by methods while in C language the following struct is present (for more information see § Overview on SDK pag.8):

*C representation:*

```
typedef struct {
                    byte             ID[MAX_ID_LENGTH];
                    short            Length;
                    char             LogicalSource[MAX_LOGICAL_SOURCE_NAME];
                    char             ReadPoint[MAX_READPOINT_NAME];
                    CAENRFIDProtocol Type;
                    short            RSSI;
                    byte             TID[MAX_TID_SIZE];
                    short            TIDLen;
                    byte             XPC[XPC_LENGTH];
                    byte             PC[PC_LENGTH];
                    } CAENRFIDTag;
```

## GetId Method

*Description:*
This method returns the tag's ID (the EPC code in Gen2 tags).

*Return value:*
An array of bytes representing the tag's ID (the EPC code in EPC Class 1 Gen 2 tags).

*Syntax:*

*C# representation:*

```
public byte[]           GetId()
```

*Java and Android representation:*

```
public byte[]           GetId()
```

## GetLength Method

*Description:*
This method returns the tag's ID length.

*Return value:*
The tag's length.

*Syntax:*

*C# representation:*

```
public short            GetLength()
```

*Java and Android representation:*

```
public short            GetLength()
```

## GetPC Method

*Description:*
This method returns the Protocol Control(PC) word code of the tag.

*Return value:*
The tag's Protocol Control code.

*Syntax:*

*C# representation:*

```
public byte[]            GetPC()
```

*Java and Android representation:*

```
public byte[]            GetPC()
```

## GetReadPoint Method

*Description:*
This method returns the read point that has detected the tag.

*Return value:*
The name of the read point that has detected the Tag

*Syntax:*

*C# representation:*

```
public string                GetReadPoint()
```

*Java and Android representation:*

```
public java.lang.String      GetReadPoint()
                             throws CAENRFIDException
```

## GetRSSI Method

*Description:*
This method returns the RSSI value measured for the tag.

*Return value:*
The tag's RSSI.

*Syntax:*

*C# representation:*

```
public short                 GetRSSI()
```

*Java and Android representation:*

```
public short                 GetRSSI()
```

## GetSource Method

*Description:*
This method returns the name of the logical source that has detected the tag.

*Return value:*
The name of the logical source that has detected the tag.

*Syntax:*

*C# representation:*

```
public CAENRFIDLogicalSource         GetSource()
```

*Java and Android representation:*

```
public CAENRFIDLogicalSource         GetSource()
```

## GetTID Method

*Description:*
This method returns the tag's TID (valid only for EPC Class 1 Gen 2 tags).

*Return value:*
An array of bytes representing the tag's TID.

*Syntax:*

*C# representation:*

```
public byte[]            GetTID()
```

*Java and Android representation:*

```
public byte[]            GetTID()
```

## GetTimeStamp Method

*Description:*
This method gets the Tag's TimeStamp.

*Return value:*
The Tags's Unix TimeStamp.

*Syntax:*

*C# representation:*

```
public DateTime                GetTimeStamp()
```

*Java and Android representation:*

```
public java.util.Date          GetTimeStamp()
```

## GetType Method

*Description:*
This method returns the air protocol of the tag.

*Return value:*
The air protocol of the tag.

*Syntax:*

*C# representation:*

```
public new CAENRFIDProtocol          GetType()
```

*Java and Android representation:*

```
public CAENRFIDProtocol              GetType()
```

## GetXPC Method

*Description:*
This method returns the tag's XPC words.

*Return value:*
The tag's XPC words.

*Syntax:*

*C# representation:*

```
public byte[]            GetXPC()
```

*Java and Android representation:*

```
public byte[]            GetXPC()
```

# 4 Event Handling

This chapter gives a description of CAENRFID event handling. It contains these topics:

- Event Handling
- C# Event Handling
- Java and Android Event Handling
- C Event Handling

# Event Handling

Standard tag's detection method (InventoryTag) is based on a polling mechanism: a call to the InventoryTag method/function results in a single read cycle and the detected tags in that cycle are returned.

An useful variant ("continuous mode") uses an event mechanism to notify detected tags: a call to the EventInventoryTag method/function starts a continuous tags' detection algorithm (multiple read cycles) and an event is generated for each read cycle to notify the detected tags (see the CAEN RFID API User Manual.for further information).

The user of the library can define an event handler method/function that is called automatically when the event raises; the data related to the event is passed to the handler as a parameter.

The user can define the number of read cycles that the EventInventoryTag have to perform using the ReadCycle parameter of the relevant LogicalSource. If ReadCycle is equal to 0 the EventInventoryTag method loops indefinetely.

The continuous mode is obtained by setting to 1 both *framed* (bit 1) and *continuous* (bit 2) flags.

The "continuous mode" can be interrupted using the InventoryAbort method function.

In readers equipped with button (like the A828BT and the qID R1240I), if the *event trigger* flag (bit 5) is enabled and the continuous mode is enabled (bit 1 and bit 2), the event handler is recalled every time the button is pressed.

The event handling is implemented using the standard event handling mechanism in .NET and Java/Android while in C it is simulated using the callback mechanism.

No other methods can be invoked on logical source and reader, during the continuous mode, nor inside the event handler. The only operation allowed is an inventory abort, that must be used to stop a reader which is working in continuous mode.

For further information on the use of the EventInventoryTag, please refer to the CAEN RFID API User Manual.

## EventInventoryTag Method

*Description:*
A call to this method will start a sequence of read cycle on each read point linked to the logical source. The readings will be notified to the controller via event generation.

*Parameters:*

| Name | Description |
|---|---|
| Mask | A byte array representing the bitmask to apply. |
| MaskLength | A value representing the bit-oriented length of the bitmask. |
| Position | A value representing the first bit where the match will start. |
| Flag | A bitmask representing the InventoryTag options. |
| pCallBack | The user defined handler called by EventInventoryTag (only in C language). |

*Return value:*
A boolean value that represents the status of the command: true if the reader has accepted the command; false otherwise.

*Syntax:*

*C# representation:*

```
public bool         EventInventoryTag(
                        byte[]                          Mask,
                        short                           MaskLength,
                        short                           Position,
                        short                           Flag)
```

*Java and Android representation:*

```
public boolean      EventInventoryTag(
                        byte[]                          Mask,
                        short                           MaskLength,
                        short                           Position,
                        short                           Flag)
                        throws CAENRFIDException
```

*C representation:*

```
typedef struct {
                        char                            *SourceName;
                        char                            *Mask;
                        unsigned char                   MaskLength;
                        unsigned char                   Position;
                        CAENRFID_INVENTORY_CALLBACK     pCallBack;
                        short                           flag;}
                        CAENRFID_EventInventoryParams;

CAENRFIDErrorCodes  CAENRFID_EventInventoryTag (
                            CAENRFIDHandle              handle,
                            CAENRFID_EventInventoryParams    InvParams);
```

*Remarks:*
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performend on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method. The Flags parameter permits to set InventoryTag method's options.

| **Flag value meaning** | |
|---|---|
| **Bit 0** | RSSI: a 1 value indicates the reader will transmit the RSSI (Return Signal Strength Indicator) in the response. |
| **Bit 1** | Framed data: a 1 value indicates that the tag's data will be transmitted by the reader to the PC as soon as the tag is detected, a 0 value means that all the tags detected are buffered in the reader and trasmitted all together at the end of the inventory cycle.<br>Bit1 and bit 2 work in conjunction and must have the same value (00 or 11). |
| **Bit 2** | Continuous acquisition: a 1 value indicates that the inventory cycle is repeated by the reader depending on the SetReadCycle setting value, a 0 value means that only one inventory cycle will be performed. If the continuous mode is selected a 0 value in the ReadCycle setting will instruct the reader to repeat the inventory cycle until an InventoryAbort method is invoked, a value X different from 0 means that the inventory cycle will be performed X times by the reader.<br>Bit1 and bit 2 work in conjunction and must have the same value (00 or 11). |
| **Bit 3** | Compact data: a 1 value indicates that only the EPC of the tag will be returned by the reader, a 0 value indicates that the complete data will be returned. In case that the compact option is enabled all the other data will be populated by this library with fakes values. |
| **Bit 4** | TID reading: a 1 value indicates that also the TID of the tag will be returned by the reader together with the other information. |
| **Bit 5** | Event trigger: when this flag is set together with the continuous mode (continuous acquisition flag + framed data flag), the inventory cycle is performed in the same way of the continuous mode with the only difference that the inventory command is performed only by pressing the button of the A828BT and qID R1240I reader. |
| **Bit 6** | XPC: a 1 value allows the reader to get the XPC word if backscattered by a tag.Tags that do not backscatter the XPC words will return an XPC array with all the 4 bytes set to 0 |
| **Bit 7** | Match tag: a 1 value enables the matching of readed tags with a tag present in the memory (A828BT reader only). |
| **Bit 8** | PC: a 1 value allows the reader to return the PC of a Gen2 tag in addition to the ID (A828BT reader only). |

## InventoryAbort Method

*Description:*
This method stops the EventInventoryTag execution.

*Syntax:*

*C# representation:*

```
public void         InventoryAbort()
```

*Java and Android representation:*

```
public void         InventoryAbort()
```

*C representation:*

```
CAENRFIDErrorCodes  CAENRFID_InventoryAbort(
                                CAENRFIDHandle      handle);
```

# C# Event Handling

## CAENRFIDEventArgs Class

The CAENRFIDEventArgs class defines the CAENRFID event arguments.

### getData Method

*Description:*
This method returns the event object value.

*Return value:*
The value of the event object.

*Syntax:*

*C# representation:*

```
public CAENRFIDNotify[]        getData()
```

## CAENRFIDEventHandler Delegate

CAENRFIDEventHandler delegate declaration.

*Parameters:*

| Name | Description |
|---|---|
| Event | the Data Event. |

*Syntax:*

*C# representation:*

```
public delegate void     CAENRFIDEventHandler(
                                              object              Sender,
                                              CAENRFIDEventArgs   Event)
```

## CAENRFIDEvent Event

The CAEN RFID event is generated by the library each time tag data arrives from the reader. The event is generated only when the EventInventoryTag method is used. It is an event of the Reader Class.

*Syntax:*

*C# representation:*

```
public event CAENRFIDEventHandler          CAENRFIDEvent
```

### Event Data

The event handler receives an argument of type CAENRFIDEventArgs containing data related to this event. The following CAENRFIDEventArgs property provides information specific to this event.

| Property | Description |
|---|---|
| Data | Represents the event object value. |

# Java and Android Event Handling

## CAENRFIDEvent Class

The CAENRFIDEvent class defines the CAENRFID event arguments.

### getData Method

*Description:*
This method returns the event object value.

*Return value:*
The value of the event object.

*Syntax:*

*Java and Android representation:*

```
public java.util.ArrayList     getData()
```

## CAENRFIDEventListener Interface

The listener interface for receiving CAEN RFID events.

### CAENRFIDTagNotify

*Description:*
This method is invoked when an action occurs.

*Parameters:*

| Name | Description |
|---|---|
| evt | The CAENRFIDEvent contains the Data Event. |

*Syntax:*

*Java and Android representation:*

```
void                    CAENRFIDTagNotify(
                                    CAENRFIDEvent       evt)
```

## addCAENRFIDEventListener

This is a Reader Class method. It adds the specified CAENRFIDEvent listener to receive CAENRFIDEvent events from this CAENRIFDReader.

*Parameters:*

| Name | Description |
|---|---|
| listener | listener - the CAENRFIDEvent listener. |

*Syntax:*

*Java and Android representation:*

```
public void         addCAENRFIDEventListener(
                            CAENRFIDEventListener     listener)
```

## removeCAENRFIDEventListener

This is a Reader Class method. It Removes the specified CAENRFIDEvent listener so that it no longer receives CAENRFID events from this CAENRIFDReader.

*Parameters:*

| Name | Description |
|---|---|
| listener | listener - the CAENRFIDEvent listener. |

*Syntax:*

*Java and Android representation:*

```
public void         removeCAENRFIDEventListener(
                            CAENRFIDEventListener     listener)
```

# C Event Handling

## CAENRFID_INVENTORY_CALLBACK

This function prototype defines the type of the user defined event handler (see the CAEN RFID API User Manual. for further information)

*Syntax:*

*C representation:*

```
typedef CAENRFIDErrorCodes (__stdcall *CAENRFID_INVENTORY_CALLBACK)
                           (const CAENRFIDNotify* Tags, const int Size);
```

# 5 Enumerations Description

This chapter gives a description of CAENRFID enumerations. It contains these topics:

- CAENRFIDBitRate Enumeration
- CAENRFIDLogicalSourceConstants Enumeration
- CAENRFIDLogicalSource.InventoryFlag Enumeration
- CAENRFIDPort Enumeration
- CAENRFIDProtocol Enumeration
- CAENRFIDReadPointStatus Enumeration
- CAENRFIDRFRegulations Enumeration
- CAENRFIDRS232Constants Enumeration
- CAENRFIDSelUnselOptions Enumeration
- CAENRFIDTag.MemBanks Enumeration

# CAENRFIDBitRate Enumeration

The CAENRFIDBitRate Enumeration gives a list of the supported radiofrequency profiles.

*Syntax:*

*C# representation:*

```
public enum             CAENRFIDBitRate
```

*Java and Android representation:*

```
public final class      CAENRFIDBitRate
```

*C representation:*

```
typedef enum            CAENRFID_Bitrate;
```

In the following table, the CAENRFIDBitRate Enumeration members are listed:

| Member | Description |
|---|---|
| DSB_ASK_FM0_TX10RX40 | DSB-ASK transmission modulation, FM0 return link encoding, 10 Kbit in transmission, 40 Kbit in reception. |
| DSB_ASK_FM0_TX40RX40 | DSB-ASK transmission modulation, FM0 return link encoding, 40 Kbit in transmission, 40 Kbit in reception. |
| DSB_ASK_FM0_TX40RX160 | DSB-ASK transmission modulation, FM0 return link encoding, 40 Kbit in transmission, 160 Kbit in reception. |
| DSB_ASK_FM0_TX160RX400 | DSB-ASK transmission modulation, FM0 return link encoding, 160 Kbit in transmission, 400 Kbit in reception. |
| DSB_ASK_M2_TX40RX160 | DSB-ASK transmission modulation, Miller (M=2) return link encoding, 40 Kbit in transmission, 160 Kbit in reception. |
| DSB_ASK_M4_TX40RX256 | DSB-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 256 Kbit in reception. |
| PR_ASK_FM0_TX40RX640 | PR-ASK transmission modulation, FM0 return link encoding, 40 Kbit in transmission, 640 Kbit in reception. |
| PR_ASK_M2_TX40RX250 | PR-ASK transmission modulation, Miller (M=2) return link encoding, 40 Kbit in transmission, 250 Kbit in reception. |
| PR_ASK_M4_TX40RX250 | PR-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 250 Kbit in reception. |
| PR_ASK_M4_TX40RX256 | PR-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 256 Kbit in reception. |
| PR_ASK_M4_TX40RX300 | PR-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 300 Kbit in reception. |
| PR_ASK_M4_TX40RX320 | DSB-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 320 Kbit in reception. |
| PR_ASK_M4_TX80RX320 | PR-ASK transmission modulation, Miller (M=4) return link encoding, 80 Kbit in transmission, 320 Kbit in reception. |

# CAENRFIDLogicalSourceConstants Enumeration

The CAENRFIDLogicalSourceConstants Enumeration gives a list of constants used for the configuration of the logical sources. Detailed explanation of the settings can be found in the EPC Class 1 Gen 2 and ISO 18000-6B specification documents.

*Syntax:*

*C# representation:*

```
public enum              CAENRFIDLogicalSourceConstants
```

*Java and Android representation:*

```
public final class       CAENRFIDLogicalSourceConstants
```

*C representation:*

```
typedef enum             CAENRFIDLogicalSourceConstants;
```

In the following table, the CAENRFIDLogicalSourceConstants Enumeration members are listed:

| Member | Description |
|---|---|
| EPC_C1G2_SESSION_S0 | Session 0 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_SESSION_S1 | Session 1 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_SESSION_S2 | Session 2 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_SESSION_S3 | Session 3 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_TARGET_A | Target A is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_TARGET_B | Target B is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_SELECTED_YES | Only the tags with the SL flag set to true are considered in the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_SELECTED_NO | Only the tags with the SL flag set to false are considered in the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| EPC_C1G2_ALL_SELECTED | All the tags are considered in the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol). |
| ISO18006B_DESB_ON | The Data Exchange Status Bit feature is used for the anticollision algorithm execution on the logical source (valid only for the ISO18000-6B air protocol). |
| ISO18006B_DESB_OFF | The Data Exchange Status Bit feature is not used for the anticollision algorithm execution on the logical source (valid only for the ISO18000-6B air protocol). |

# CAENRFIDLogicalSource.InventoryFlag Enumeration

The CAENRFIDLogicalSource.InventoryFlag Enumeration gives a list of constants used for the configuration of the inventory function that comes with Flag parameter.

*Syntax:*

*C# representation:*

```
public enum              CAENRFIDLogicalSource.InventoryFlag
```

*Java and Android representation:*

```
public final class       CAENRFIDLogicalSource.InventoryFlag
```

*C representation:*

```
typedef enum             CAENRFIDLogicalSource.InventoryFlag;
```

In the following table, the CAENRFIDLogicalSource.InventoryFlag Enumeration members are listed:

| Member | Description |
|---|---|
| RSSI | When enabled, the RSSI value representing the backscattered RF field strenght is returned by the reader for each tag read. Some reader cannot have this feature. |
| FRAMED | Tags found in an inventoy cycle are not bufferized in reader and sent all together, but sent one by one as soon as a tag is detected. It Is used in conjunction with the continuous flag. |
| CONTINUOUS | Enables the continuos mode acquisition. Logical source must have ReadCycle parameter set to 0. |
| COMPACT | Instruct the reader to not return any other information than the ID. Other values are fake and filled by the library. |
| TID_READING | Instruct the reader to return the TID memory. On some reader it must be used in conjunction with SetTIDLength to work more efficiently. |
| EVENT_TRIGGER | Work only in combination with continuous mode. In reader provided with identification button, it instructs the reader to do an inventory cycle only when the button is pressed. |
| XPC | It instructs the reader to return XPC. If no XPC is present on the tag, the XPC field of a tag is filled up with zero values. |
| PC | Instruct the reader to return the PC of the EPC bank for each inventoried tag. |

# CAENRFIDPort Enumeration

The CAENRFIDPort Enumeration gives a list of the communication ports supported by the CAEN RFID readers.

*Syntax:*

*C# representation:*

```
public enum              CAENRFIDPort
```

*Java and Android representation:*

```
public final class       CAENRFIDPort
```

*C representation:*

```
typedef enum             CAENRFIDPort;
```

*Remarks:*
In order to align the three libraries, the members name in C language have changed, now reporting the CAENRFID_ suffix, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDPort Enumeration members are listed:

| Member | Description |
|---|---|
| CAENRFID_RS232 | Serial port communication link. |
| CAENRFID_TCP | TCP/IP network communication link. |
| CAENRFID_USB | USB communication link. |

# CAENRFIDProtocol Enumeration

The CAENRFIDProtocol Enumeration gives a list of the air protocol supported by the CAEN RFID readers.

*Syntax:*

*C# representation:*

```
public enum              CAENRFIDProtocol
```

*Java and Android representation:*

```
public final class       CAENRFIDProtocol
```

*C representation:*

```
typedef enum             CAENRFIDProtocol;
```

*Remarks:*
In order to align the three libraries, the members name in C language have changed, now reporting the CAENRFID_ suffix, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDProtocol Enumeration members are listed:

| Member | Description |
|---|---|
| CAENRFID_ISO18000_6b | ISO18000-6B air protocol. |
| CAENRFID_EPC119 | EPC 1.19 air protocol. |
| CAENRFID_EPC_C1G1 | EPCGlobal Class1 Gen1 air protocol. |
| CAENRFID_ISO18000_6a | ISO18000-6A air protocol. |
| CAENRFID_EPC_C1G2 | EPCGlobal Class1 Gen2 (aka ISO18000-6C) air protocol. |
| CAENRFID_MULTIPROTOCOL | This value permits to use all the supported air protocol at the same time. Suggested setting only for demo purposes. |

# CAENRFIDReadPointStatus Enumeration

The CAENRFIDReadPointStatus gives a list of the possible ReadPoint status values.

*Syntax:*

*C# representation:*

```
public enum             CAENRFIDReadPointStatus
```

*Java and Android representation:*

```
public final class      CAENRFIDReadPointStatus
```

*C representation:*

```
typedef enum            CAENRFIDReadPointStatus;
```

*Remarks:*
In order to align the three libraries, the members name in C language have changed, now reporting the STATUS_ suffix, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDReadPointStatus Enumeration members are listed:

| Member | Description |
|---|---|
| STATUS_BAD | Bad antenna connection. |
| STATUS_GOOD | Good antenna connection. |
| STATUS_POOR | Poor antenna connection. |

# CAENRFIDRFRegulations Enumeration

The CAENRFIDRFRegulations gives a list of country radiofrequency regulations.

*Syntax:*

*C# representation:*

```
public enum             CAENRFIDRFRegulations
```

*Java and Android representation:*

```
public final class      CAENRFIDRFRegulations
```

*C representation:*

```
typedef enum            CAENRFIDRFRegulations;
```

*Remarks:*

In order to align the three libraries, the regulations, previously declared as #define, are now members of an enumeration, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDRFRegulations Enumeration members are listed:

| Member | Description |
|---|---|
| ETSI_302208 | ETSI_302208 radiofrequency regulation. |
| ETSI_300220 | ETSI_300220 radiofrequency regulation. |
| FCC_US | FCC_US radiofrequency regulation. |
| MALAYSIA | MALAYSIA radiofrequency regulation. |
| JAPAN | JAPAN radiofrequency regulation. |
| KOREA | KOREA radiofrequency regulation. |
| AUSTRALIA | AUSTRALIA radiofrequency regulation. |
| CHINA | CHINA radiofrequency regulation. |
| TAIWAN | TAIWAN radiofrequency regulation. |
| SINGAPORE | SINGAPORE radiofrequency regulation. |
| BRAZIL | BRAZIL radiofrequency regulation. |
| JAPAN_STD_T106 11 | JAPAN radiofrequency regulation (ARIB STD-T106 Premises radio station (1W) - LBT free) |
| JAPAN_STD_T107 12 | JAPAN radiofrequency regulation (ARIB STD-T107 Specified low power radio station (250mW) - with LBT) |

# CAENRFIDRS232Constants Enumeration

The CAENRFIDRS232Constants gives a list of settings for the serial port configuration.

*Syntax:*

*C# representation:*

```
public enum              CAENRFIDRS232Constants
```

*Java and Android representation:*

```
public final class       CAENRFIDRS232Constants
```

*C representation:*

```
typedef enum             CAENRFID_RS232_Parity;
typedef enum             CAENRFID_RS232_FlowControl;
```

In the following table, the CAENRFIDRS232Constants Enumeration members are listed:

| Member | Description |
|---|---|
| CAENRS232_Parity_None | No parity bit is sent at all. |
| CAENRS232_Parity_Odd | Odd parity. |
| CAENRS232_Parity_Even | Even parity. |
| CAENRFID_RS232_FlowControl_XonXoff | Software flow control. |
| CAENRFID_RS232_FlowControl_Hardware | Hardware flow control. |
| CAENRFID_RS232_FlowControl_None | No flow control. |

# CAENRFIDSelUnselOptions Enumeration

The CAENRFIDSelUnselOptions gives a list of operations supported by the Group Select/Unselect command (valid only for the ISO18000-6B air protocol).

*Syntax:*

*C# representation:*

```
public enum             CAENRFIDSelUnselOptions
```

*Java and Android representation:*

```
public final class      CAENRFIDSelUnselOptions
```

*C representation:*

```
typedef enum            CAENRFID_SelUnsel_Op;
```

In the following table, the CAENRFIDSelUnselOptions Enumeration members are listed:

| Member | Description |
|---|---|
| SEL_EQUAL | select equal to. |
| SEL_NOT_EQUAL | select not equal to. |
| SEL_GREATER_THAN | select greater than. |
| SEL_LOWER_THAN | select lower than. |
| UNS_EQUAL | unselect equal to. |
| UNS_NOT_EQUAL | unselect not equal to. |
| UNS_GREATER_THAN | unselect greater than. |
| UNS_LOWER_THAN | unselect lower than. |

# CAENRFIDTag.MemBanks Enumeration

The CAENRFIDTag.MemBanks enumerates the bank name of a generic ISO18000-6C tag.

*Syntax:*

*C# representation:*

```
public enum          MemBanks
                          {
                          RESERVED = 0,
                          EPC = 1,
                          TID = 2,
                          USER = 3
                          }
```

*Java and Android representation:*

```
public enum          MemBanks {
                          RESERVED(0), EPC(1), TID(2), USER(3);
                          private int code;
                          private MemBanks(int c) {
                          code = c;
                          }
                          public int getBankNum() {
                          return code;
                          }
                          }
```

*C representation:*

```
typedef enum         {
                          RESERVED    = 0,
                          EPC         = 1,
                          TID         = 2,
                          USER        = 3
                          } CAENRFIDMemBanks;
```

In the following table, the CAENRFIDTag.MemBanks Enumeration members are listed:

| Member | Description |
|---|---|
| RESERVED | Indicates the reserved bank |
| EPC | Indicates the EPC bank |
| TID | Indicates the TID bank |
| USER | Indicates the USER bank |

# 6 CAENRFID Obsolete Methods

This chapter gives a list of CAENRFID obsolete methods, functions, members and data types. It contains these topics:

- C# Obsolete Methods
- C# Obsolete Members
- Java and Android Obsolete Methods
- C Obsolete Functions
- C Obsolete Data Types

Below it is available a list of obsolete methods, functions, members and data types for the three different program languages.
It is recommended not to use these methods since they will not be available in new reader's firmware release.
Some of these obsolete methods have been replaced by new ones as specified in the table below.

# C# Obsolete Methods

| Method | Description |
|---|---|
| **Channel Class** | |
| AddSource | This method is now obsolete. |
| AddTrigger | This method is now obsolete. |
| GetChannelStatus | This method is now obsolete. |
| GetChannelType | This method is now obsolete. |
| GetName | This method is now obsolete. |
| IsSourcePresent | This method is now obsolete. |
| IsTriggerPresent | This method is now obsolete. |
| RemoveSource | This method is now obsolete. |
| RemoveTrigger | This method is now obsolete. |
| **LogicalSource Class** | |
| AddTrigger | This method is now obsolete. |
| Fujitsu_BurstErase | This method is now obsolete. |
| Fujitsu_BurstWrite | This method is now obsolete. |
| Fujitsu_ChgBlockGroupPassword | This method is now obsolete. |
| Fujitsu_ChgBlockLock | This method is now obsolete. |
| Fujitsu_ChgWordLock | This method is now obsolete. |
| Fujitsu_ReadBlockLock | This method is now obsolete. |
| Fujitsu_Refresh | This method is now obsolete. |
| GetLostThreshold | This method is now obsolete. |
| GetObservedThreshold | This method is now obsolete. |
| Hitachi_BlockLock | This method is now obsolete. |
| Hitachi_BlockReadLock | This method is now obsolete. |
| Hitachi_GetSystemInformation | This method is now obsolete. |
| Hitachi_ReadLock | This method is now obsolete. |
| Hitachi_SetAttenuate | This method is now obsolete. |
| Hitachi_WriteMultipleWords | This method is now obsolete. |
| Inventory | This method is now obsolete. |
| KillTag | This method is now obsolete. |
| LockTag | This method is now obsolete. |
| NXP_Calibrate | This method is now obsolete. |
| ProgramID | This method is now obsolete. |
| RemoveTrigger | This method is now obsolete. |
| SetLostThreshold | This method is now obsolete. |
| SetObservedThreshold | This method is now obsolete. |
| **Reader Class** | |
| ConnectRS232 | This method is now obsolete. |
| CreateChannel | This method is now obsolete. |
| CreateTrigger | This method is now obsolete. |
| FWUpgradeTFTP | This method is now obsolete. |
| GetAllocatedChannels | This method is now obsolete. |
| GetAllocatedTriggers | This method is now obsolete. |
| GetChannelData | This method is now obsolete. |
| GetDESB | This method is now obsolete. |
| GetEventMode | This method is now obsolete. |
| RemoveChannel | This method is now obsolete. |
| RemoveTrigger | This method is now obsolete. |
| SetDESB | This method is now obsolete. |
| SetEventMode | This method is now obsolete. |
| SetReaderOPtions | This method is now obsolete. |
| **Receiver Class** | |
| KillServer | This method is now obsolete. |
| **Trigger Class** | |

| | |
|---|---|
| GetIOLineValue | This method is now obsolete. |
| GetName | This method is now obsolete. |
| GetTimerValue | This method is now obsolete. |
| IsLinkedToChannel | This method is now obsolete. |
| IsLinkedToSource | This method is now obsolete. |

**Tab. 6.1: C# Obsolete Methods**

# C# Obsolete Members

| Member | Description |
|---|---|
| **BitRate Enumeration** | |
| TX10RX40 | This member is now obsolete. |
| TX40RX40 | This member is now obsolete. |
| TX40RX160 | This member is now obsolete. |
| **EventMode Enumeration** | |
| READCYCLE_MODE | This member is now obsolete. |
| TIME_MODE | This member is now obsolete. |
| NOEVENT_MODE | This member is now obsolete. |
| **TagEventType Enumeration** | |
| TAG_GLIMPSED | This member is now obsolete. |
| TAG_LOST | This member is now obsolete. |
| TAG_OBSERVED | This member is now obsolete. |
| TAG_UNKNOWN | This member is now obsolete. |

**Tab. 6.2: C# Obsolete Members**

# Java and Android Obsolete Methods

| Method | Description |
|---|---|
| **BitRate Class** | |
| TX10RX40 | This method is now obsolete. |
| TX40RX40 | This method is now obsolete. |
| TX40RX160 | This method is now obsolete. |
| **Channel Class** | |
| AddSource | This method is now obsolete. |
| AddTrigger | This method is now obsolete. |
| GetChannelStatus | This method is now obsolete. |
| GetChannelType | This method is now obsolete. |
| GetName | This method is now obsolete. |
| IsSourcePresent | This method is now obsolete. |
| IsTriggerPresent | This method is now obsolete. |
| RemoveSource | This method is now obsolete. |
| RemoveTrigger | This method is now obsolete. |
| **Event Class** | |
| Data | This method is now obsolete. Use getData instead. |
| **EventMode Class** | |
| READCYCLE_MODE | This method is now obsolete. |
| TIME_MODE | This method is now obsolete. |
| NOEVENT_MODE | This method is now obsolete. |
| **LogicalSource Class** | |
| AddTrigger | This method is now obsolete. |
| Fujitsu_BurstErase | This method is now obsolete. |
| Fujitsu_BurstWrite | This method is now obsolete. |
| Fujitsu_ChgBlockGroupPassword | This method is now obsolete. |
| Fujitsu_ChgBlockLock | This method is now obsolete. |
| Fujitsu_ChgWordLock | This method is now obsolete. |
| Fujitsu_ReadBlockLock | This method is now obsolete. |
| Fujitsu_Refresh | This method is now obsolete. |
| GetLostThreshold | This method is now obsolete. |
| GetObservedThreshold | This method is now obsolete. |

| Method | Description |
|---|---|
| Hitachi_GetSystemInfo | This method is now obsolete. |
| Hitachi_BlockLock | This method is now obsolete. |
| Hitachi_BlockReadLock | This method is now obsolete. |
| Hitachi_GetSystemInformation | This method is now obsolete. |
| Hitachi_ReadLock | This method is now obsolete. |
| Hitachi_SetAttenuate | This method is now obsolete. |
| Hitachi_WriteMultipleWords | This method is now obsolete. |
| Inventory | This method is now obsolete. |
| NXP_Calibrate | This method is now obsolete. |
| NXP_ChangeEAS (only non secure version) | This method is now obsolete. |
| NXP_EAS_Alarm (only secure version) | This method is now obsolete. |
| NXP_ResetReadProtect (only secure version) | This method is now obsolete. |
| RemoveTrigger | This method is now obsolete. |
| SetLostThreshold | This method is now obsolete. |
| SetObservedThreshold | This method is now obsolete. |
| **Notify Class** | |
| getAntenna | This method is now obsolete. Use getReadPoint instead. |
| **Reader Class** | |
| CreateChannel | This method is now obsolete. |
| CreateTrigger | This method is now obsolete. |
| FWUpgradeTFTP | This method is now obsolete. |
| GetAllocatedChannels | This method is now obsolete. |
| GetAllocatedTriggers | This method is now obsolete. |
| GetChannelData | This method is now obsolete. |
| GetEventMode | This method is now obsolete. |
| RemoveChannel | This method is now obsolete. |
| RemoveTrigger | This method is now obsolete. |
| SetEventMode | This method is now obsolete. |
| SetReaderOPtions | This method is now obsolete. |
| **Receiver Class** | |
| KillServer | This method is now obsolete. |
| **TagEventType Class** | |
| TAG_GLIMPSED | This method is now obsolete. |
| TAG_LOST | This method is now obsolete. |
| TAG_OBSERVED | This method is now obsolete. |
| TAG_UNKNOWN | This method is now obsolete. |
| **Trigger Class** | |
| GetIOLineValue | This method is now obsolete. |
| GetName | This method is now obsolete. |
| GetTimerValue | This method is now obsolete. |
| IsLinkedToChannel | This method is now obsolete. |
| IsLinkedToSource | This method is now obsolete. |
| **HitachiSysInfo** | |
| GetBankLock | This method is now obsolete. |
| GetBlockReadLock | This method is now obsolete. |
| GetBlockReadWriteLock | This method is now obsolete. |
| GetBlockWriteLock | This method is now obsolete. |
| GetInfoFlag | This method is now obsolete. |
| getReserved | This method is now obsolete. |
| getSetAttenuateLevel | This method is now obsolete. |
| getTID | This method is now obsolete. |
| getUII | This method is now obsolete. |
| getUser | This method is now obsolete. |

**Tab. 6.3: Java and Android Obsolete Methods**

# C Obsolete Functions

| Function | Description |
|---|---|
| AddNotifyTrigger | This function is now obsolete. |
| AddReadTrigger | This function is now obsolete. |
| AddSourceToChannel | This function is now obsolete. |
| AllocateChannel | This function is now obsolete. |
| AllocateTrigger | This function is now obsolete. |
| CustomCmd_C1G2 | This function is now obsolete.<br>Use CustomCommand_EPC_C1G2 instead. |
| DeallocateChannel | This function is now obsolete. |
| DeallocateTrigger | This function is now obsolete. |
| ExtendedInventoryTag | This function is now obsolete. |
| FirmwareUpgrade | This function is now obsolete. |
| FreeNotifyMemory | This function is now obsolete. |
| Fujitsu_BurstErase | This function is now obsolete. |
| Fujitsu_BurstWrite | This function is now obsolete. |
| Fujitsu_ChgBlockGroupPassword | This function is now obsolete. |
| Fujitsu_ChgBlockLock | This function is now obsolete. |
| Fujitsu_ChgWordLock | This function is now obsolete. |
| Fujitsu_ReadBlockLock | This function is now obsolete. |
| Fujitsu_Refresh | This function is now obsolete. |
| GetAllocatedChannels | This function is now obsolete. |
| GetAllocatedTriggers | This function is now obsolete. |
| GetChannelData | This function is now obsolete. |
| GetChannelInTrigger | This function is now obsolete. |
| GetChannelStatus | This function is now obsolete. |
| GetDE_SB | This function is now obsolete.<br>Use GetDESB_ISO180006B instead. |
| GetEventMode | This function is now obsolete. |
| GetFWRelease | This function is now obsolete. Use GetFirmwareRelease instead. |
| GetModulation | This function is now obsolete. |
| GetNotification | This function is now obsolete. |
| GetQ_C1G2 | This function is now obsolete.<br>Use GetQValue_EPC_C1G2 instead. |
| GetQ_EPC_C1G2 | This function is now obsolete.<br>Use GetQValue_EPC_C1G2 instead. |
| GetReadPointInSource | This function is now obsolete. Use isReadPointPresent instead. |
| GetSourceConfiguration | This function is now obsolete. |
| GetSourceInChannel | This function is now obsolete. |
| GetSourceInTrigger | This function is now obsolete. |
| GetSWRelease | This function is now obsolete. |
| GetTriggerInChannel | This function is now obsolete. |
| Hitachi_BlockLock | This function is now obsolete. |
| Hitachi_BlockReadLock | This function is now obsolete. |
| Hitachi_GetSystemInformation | This function is now obsolete. |
| Hitachi_ReadLock | This function is now obsolete. |
| Hitachi_SetAttenuate | This function is now obsolete. |
| Hitachi_WriteMultipleWords | This function is now obsolete. |
| Inventory | This function is now obsolete. |
| KillTag | This function is now obsolete. Use KillTag_EPC_C1G1 instead. |
| KillTag_C1G2 | This function is now obsolete. Use KillTag_EPC_C1G2 instead. |
| Lock | This function is now obsolete.<br>Use LockTag_ISO180006B instead. |
| Lock_C1G2 | This function is now obsolete. Use LockTag_EPC_C1G2 instead. |
| NXP_Calibrate | This function is now obsolete. |
| NXP_ChangeEAS | This function is now obsolete. |
| NXP_SecureCalibrate | This function is now obsolete. |
| NXP_SecureEAS_Alarm | This function is now obsolete. |
| NXP_SecureResetReadProtect | This function is now obsolete. |
| ProgramID | This function is now obsolete. |

| Function | Description |
|---|---|
| | Use ProgramID_EPC_C1G1 instead. |
| ProgramID_C1G2 | This function is now obsolete.<br>Use ProgramID_EPC_C1G2 instead. |
| QueryAck_C1G2 | This function is now obsolete.<br>Use QueryAck_EPC_C1G2 instead. |
| QueryTag_C1G2 | This function is now obsolete. Use Query_EPC_C1G2 instead. |
| Read | This function is now obsolete. Use ReadTagData instead. |
| Read_C1G2 | This function is now obsolete.<br>Use ReadTagData_EPC_C1G2 instead. |
| RemoveNotifyTrigger | This function is now obsolete. |
| RemoveReadTrigger | This function is now obsolete. |
| RemoveSourceFromChannel | This function is now obsolete. |
| SecureCustomCmd_C1G2 | This function is now obsolete.<br>Use SecureCustomCommand_EPC_C1G2 instead. |
| SecureLock_C1G2 | This function is now obsolete.<br>Use SecureLockTag_EPC_C1G2 instead. |
| SecureProgramID_C1G2 | This function is now obsolete.<br>Use SecureProgramID_EPC_C1G2 instead. |
| SecureRead_C1G2 | This function is now obsolete.<br>Use SecureReadTagData_EPC_C1G2 instead. |
| SecureWrite_C1G2 | This function is now obsolete.<br>Use SecureWriteTagData_EPC_C1G2 instead. |
| SetBitrate | This function is now obsolete.<br>Use CAENRFID_SetBitRate instead. |
| SetDE_SB | This function is now obsolete.<br>Use SetDESB_ISO180006B instead. |
| SetEventMode | This function is now obsolete. |
| SetModulation | This function is now obsolete. |
| SetQ_C1G2 | This function is now obsolete.<br>Use SetQValue_EPC_C1G2 instead. |
| SetQ_EPC_C1G2 | This function is now obsolete.<br>Use SetQValue_EPC_C1G2 instead. |
| SetSourceConfiguration | This function is now obsolete. |
| Write | This function is now obsolete. Use WriteTagData instead. |
| Write_C1G2 | This function is now obsolete.<br>Use WriteTagData_EPC_C1G2 instead. |

**Tab. 6.4: C Obsolete Functions**

# C Obsolete Data Types

| Data Type | Description |
|---|---|
| **CAENRFID_SOURCE_Parameter** | |
| CONFIG_READCYCLE | This data type is now obsolete.<br>Use Get/SetReadCycle Method instead. |
| CONFIG_OBSERVEDTHRESHOLD | This data type is now obsolete. |
| CONFIG_LOSTTHRESHOLD | This data type is now obsolete. |
| CONFIG_G2_Q_VALUE | This data type is now obsolete.<br>Use Get/SetQ_EPC_C1G2 Method instead. |
| CONFIG_G2_SESSION | This data type is now obsolete.<br>Use Get/SetSession_EPC_C1G2 Method instead. |
| CONFIG_G2_TARGET | This data type is now obsolete.<br>Use Get/SetTarget_EPC_C1G2 Method instead. |
| CONFIG_G2_SELECTED | This data type is now obsolete. Use Get/SetSelected_EPC_C1G2 Method instead. |
| CONFIG_ISO18006B_DESB | This data type is now obsolete.<br>Use Get/SetDESB_ISO180006B Method instead. |
| **CAENRFID_EventMode** | |
| READCYCLE_MODE | This data type is now obsolete. |
| TIME_MODE | This data type is now obsolete. |
| NOEVENT_MODE | This data type is now obsolete. |
| **CAENRFID_FWUpgradeType** | |
| RFID_TFTP | This data type is now obsolete. |
| **CAENRFID_ExtendedInventoryParams** | This data type is now obsolete. |

**Tab. 6.5: C Obsolete Data Types**