

## Merge data formats v1.0

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### Introduction

This document specifies version 1.0 of data frames produced by the NUMEXO2 boards. The specification is based on version 2.2 of the Multiframe Metaformat (MFM2.2) defined in the corresponding document.

Event building is able to produce events by using event number or time stamp. One frame type has been defined for each case.

### Event number merge

Field Name	Field Size	Field Description
metaType	1 BYTE	Same meaning as in MFM specification  The Endianness parameter refers only to the endianness of the header, this parameter indicate nothing about the endianness of the included frames.  In the same way, the unit block size means nothing globally. This size is dynamically calculated as small as possible, to reduce as much as possible trailing bytes. Each included frame contains it's own unit block size. Frame size has to be recalculated for each included frame.  Blobness is set to 0
frameSize	3 BYTES	Same meaning as in MFM specification
dataSource	1 BYTE	Same meaning as in MFM specification  As produced by merging on a computer, this ID should be specific, 0xFF for example
frameType	2 BYTES	Same meaning as in MFM specification  The Merge Data Frame frameType code is set from 0xFF00 to 0xFFFF, Merge using event id is 0xFF01
revision	1 BYTE	Same meaning as in MFM specification  Set to 1 as revision 1
headerSize	2 BYTES	Same meaning as in MFM specification  The specifications described here lead to a total of 20 used bytes. It has to be recalculated considering blocks unit size with a possible « reserve » sub-section
itemSize	2 BYTES	Same meaning as in MFM specification  Merge frame is a layered frame, value of this field is 0
nItems	4 BYTES	Same meaning as in MFM specification  Total number of GET Cobo frames collected
eventIdx	4 BYTES	The common eventIdx of collected frames

## Equal time merge

Field Name	Field Size	Field Description
metaType	1 BYTE	<p>The Endianness parameter refers only to the endianness of the header, this parameter indicate nothing about the endianness of the included frames.</p> <p>In the same way, the unit block size means nothing globally. This size is dynamically calculated as small as possible, to reduce as much as possible trailing bytes. Each included frame contains it's own unit block size. Frame size has to be recalculated for each included frame.</p> <p>Blobness is set to 0</p>
frameSize	3 BYTES	Same meaning as in MFM specification
dataSource	1 BYTE	<p>Same meaning as in MFM specification</p> <p>As produced by merging on a computer, this ID should be specific, 0xFF for example</p>
frameType	2 BYTES	<p>Same meaning as in MFM specification</p> <p>The Merge Data Frame frameType code is set from 0xFF00 to 0xFFFF, Merge using strict equality in time stamp is 0xFF02</p>
revision	1 BYTE	<p>Same meaning as in MFM specification</p> <p>Set to 1 as revision 1</p>
headerSize	2 BYTES	<p>Same meaning as in MFM specification</p> <p>The specifications described here lead to a total of 22 used bytes. It has to be recalculated considering blocks unit size with a possible « reserve » sub-section</p>
itemSize	2 BYTES	<p>Same meaning as in MFM specification</p> <p>Merge frame is a layered frame, value of this field is 0</p>
nItems	4 BYTES	<p>Same meaning as in MFM specification</p> <p>Total number of GET Cobo frames collected</p>
eventTime	6 BYTES	The lower time of collected frames (strict equality if deltaT =0))
deltaT	2 BYTES	Width of time window

## **FrameTypes already used (27-06-2013)**

Get Data Frame : 0x01

Numexo2 EC Frame (exogam crystal) : 0x10

Numexo2 O Frame (oscilloscope) : 0x11

Numexo2 Neda NR Frame (neda raw data) : 0x12

Numexo2 Neda NC Frame (neda compressed data) : 0x13

Merge with Events Id: 0xFF01

Merge with Time : 0xFF02