2000 series video stream user data format

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Revision History

version	Issue date	author	comment
0.9	2005/3/17	Joe Wu	First draft

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1.1 Overview

Vivotek embedded some useful information in the video stream so that the developer can use them for advanced features in their software. The information includes digital input states, digital output states, motion detection, etc. This document describes the data format in MJPEG video stream.

1.2 JPEG user data format

For MJPEG, the extra data is included in the application header for every image. Each image contains the data as followings. The format is applied to all 2000 series products.

b15	b14	b13	b12	b11	b10	b09	b08
APPDH							
b07	b06	b05	b04	b03	b02	b01	b00
APPDH							
b15	b14	b13	b12	b11	b10	b09	b08
APPDL							
b07	b06	b05	b04	b03	b02	b01	b00
APPDL							
b11	b10	b09	b08	b07	b06	b05	b04
YEAR							
b03	b02	b01	b00	b03	b02	b01	b00
YEAR				MONTH			
b04	b03	b02	b01	b00	b04	b03	b02
DAY					HOUR		
b01	b00	b05	b04	b03	b02	b01	b00
HOUR		MINUTE					
b05	b04	b03	b02	b01	b00	b09	b08
SECOND						TR	
b07	b06	b05	b04	b03	b02	b01	b00

TR							
b03	b02	b01	b00	b00	b00	b00	b00
CHID				DI2	DI1	SF	AF
b07	b06	b05	b04	b03	b02	b01	b00
DO2	DO1	DI4	DI3	AP			

- Application Data Header (APPDH)(16 bits)
  - It consists of the value 1111 1111 1110 0000.
- Application Data Length (APPDL)(16 bits)
  - Its value is 10 plus the length of PSPARE in byte.
- YEAR Code(12 bits)
  - It starts from 1999(0111 1100 1111) till 4095(1111 1111 1111 1111).
- MONTH Code(4 bits)
  - It starts from 1(0001)…12(1100).
- DAY Code(5 bits)
  - It starts from 1(0000 1) to 31(1111 1).
- HOUR Code(5 bits)
  - It starts from 0(0000 0) to 23(1011 1).
- MINUTE Code(6 bits)
  - It starts from 0(0000 00) to 59(1110 11).
- SECOND Code(6 bits)
  - It starts from 0(0000 00) to 59(1110 11).
- Temporal Reference (TR)(10 bits)
  - This is a 10-bit number which can have 1024 possible values in order to correct the decoding and displaying time.
- Channel ID (CHID)(4 bits)
  - It starts from 0(0000) to 3(0011).
- Digital Input Alert Flag (DI1 ~ DI4)(1 bit)
  - These bits are used to indicate the DI alert triggered by user defined (H/L) with the corresponding channel. That is Channel 0 corresponds to DI1, Channel 1 to DI2 and so forth. 1 => (H/C), 0 => (L/O)
- Digital output Alert flag (DO1, DO2) (1 bit)
  - These bits are used to indicate the DO status.
- Signal validation Flag (SF)(1 bit)
  - 1(TRUE): Video signal is valid for this channel, 0(FALSE): Signal loss.
- Alert Flag (AF)(1 bit)
  - 1: alert, 0: no alert.
- Alert Percentage (AP)(4 bits)
  - Alert percentage for each frame.
    - AP = MAX((Real AP)/6-1, 0), Real AP = (AP+1)*6;