

Axis JPEG Format – Comment Fields

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DOCUMENT HISTORY

| | |
|------------------|-----------------------------------|
| 2004-Aug-26 1.00 | Initial version. |
| 2004-Sep-14 1.01 | Changed description of unit time. |

1. OVERVIEW

This document specifies the format of the comment fields in the JPEG header from JPEG images generated from Axis video products based on the Axis Artpec-2 chip.

The comments can contain for example product information, time stamp and trigger data.

2. JPEG

The Axis Artpec-2 Device Driver Module can create JPEG images with different resolutions, compression, scaling, rotation, text overlays, image overlays, and with optional JFIF and comment header markers. The JPEG images are coded as non-differential Huffman coded baseline sequential DCT (4:2:2) images. More information about the JPEG format can be found in the JPEG standard.

2.1 Header

| Marker | Value | Size (bytes) | Description |
|-------------------|-----------|--------------|------------------------------------------------|
| SOI | 0xFF,0xD8 | 2 | Start Of Image |
| APP0 ¹ | 0xFF,0xE0 | 18 | JFIF (JPEG File Interchange Format) |
| COM | 0xFF,0xFE | 17 | Product Information Comment |
| COM | 0xFF,0xFE | 17 | Time Stamp Comment |
| COM ¹ | 0xFF,0xFE | 6...262 | Trigger Data Comment |
| DQT | 0xFF,0xDB | 69 | Quantization Table - Luminance (Y) |
| DQT ² | 0xFF,0xDB | 69 | Quantization Table - Chrominance (Cb/Cr) |
| SOF | 0xFF,0xC0 | 19/13 | Start Of Frame (19 color/13 black&white) |
| DHT | 0xFF,0xC4 | 33 | Huffman Table - Luminance (Y) - DC Diff |
| DHT | 0xFF,0xC4 | 183 | Huffman Table - Luminance (Y) - AC Coeff |
| DHT ² | 0xFF,0xC4 | 33 | Huffman Table - Chrominance (Cb/Cr) - DC Diff |
| DHT ² | 0xFF,0xC4 | 183 | Huffman Table - Chrominance (Cb/Cr) - AC Coeff |
| SOS | 0xFF,0xDA | 14/10 | Start Of Scan (14 color/13 black&white) |

| | | | |
|-----|-----------|-----|--------------------------|
| ... | ... | ... | Huffman coded image data |
| EOF | 0xFF,0xD9 | 2 | End Of Image |

¹ Optional marker segment.

² Only present in color images.

2.2 Comment Fields

Trigger data comments are optional.

| Axis ID | Description |
|-----------|-----------------------------|
| 0x0A,0x00 | Product information comment |
| 0x0A,0x01 | Time stamp comment |
| 0x0A,0x03 | Trigger data comment |

2.2.1 Product Information

In the product information comment information such as Hardware ID, firmware version and serial number can be found.

| Value | Size (bytes) | Description |
|-------------------------------|--------------|------------------------------|
| 0xFF,0xFE | 2 | Comment marker |
| 0x00,0x0F | 2 | Length (15) |
| 0x0A | 1 | Axis ID (10) |
| 0x00 | 1 | Product Information ID (0) |
| 0x##,0x## | 2 | Hardware ID (0...65535) |
| 0x##,0x## | 2 | Firmware Version (0x##.0x##) |
| 0x## | 1 | Firmware Bulid Nbr (0...255) |
| 0x00,0x40,0x8c,0x##,0x##,0x## | 6 | SerialNbr(00:40:8c:##:##:##) |

2.2.2 Time Stamp

The time stamp comment contains information about the user as well as the unit time.

| Value | Size (bytes) | Description |
|---------------------|--------------|--------------------------------------------------------------------------|
| 0xFF,0xFE | 2 | Comment marker |
| 0x00,0x0F | 2 | Length (15) |
| 0x0A | 1 | Axis ID (10) |
| 0x01 | 1 | Time Stamp ID (1) |
| 0x##,0x##,0x##,0x## | 4 | User Time - seconds since EPOCH (0...2 ³² -1) |
| 0x## | 1 | User Time - 1/100 seconds (0...99) |
| 0x##,0x##,0x##,0x## | 4 | Unit Time - seconds since the unit was produced (0...2 ³² -1) |
| 0x## | 1 | Unit Time - 1/100 seconds (0..99) |
| 0x## | 1 | Unit Time - invalid (1), valid (0) |

2.2.3 Trigger Data Comment (optional)

The trigger data comment is an optional comment included in some products. See Trigger Data document for more information.

| Value | Size (bytes) | Description |
|-----------|--------------|------------------------|
| 0xFF,0xFE | 2 | Comment marker |
| 0x##,0x## | 2 | Length (4...260) |
| 0x0A | 1 | Axis ID (10) |
| 0x03 | 1 | Trigger Data ID (0x03) |
| ... | Length - 4 | The trigger data |