# ERRATUM 5256:
# CLARIFICATIONS TO ENSURE INTEROPERABILITY BETWEEN 3DG AND 3DD

**Applicable to:**

**3D Synchronization Profile Version 1.0**

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V10

## Revision History

| Revision | Date | Comments |
|---|---|---|
| D10r00 | 2013-07-23 | Initial Draft |
| D10r01 | 2013-08-07 | Changed original section to original with changes. |
| D10r02 | 2013-08-14 | Approved by 3DG WG, submitted to BARB |
| D10r03 | 2013-08-22 | All comments resolved, submitted for BARB approval |
| D10r04 | 2013-08-23 | Minor editorial cleanup from final WG review |
| D10r05 | 2013-08-26 | More editorial cleanup from technical editor |
| V10 | 2013-10-22 | Adopted by the Bluetooth SIG Board of Directors |

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## Erratum 5256—Clarifications to ensure interoperability

## 8.3 3D Broadcast Message Format

***[Original text with changes]***

The format of the 3D Broadcast Message is shown in the following table.

| Field | Position | Type | Value | Notes |
|---|---|---|---|---|
| Frame Sync Instant | Byte 0~~,~~ bit 0 ~~–~~ to Byte 3~~,~~ bit 2~~3~~ | UINT32~~28~~ | ~~Expressed in units of the~~ 3DD Native Bluetooth Clock Bits[27:1]. | Byte 0 bit 0 = 3DD Native Bluetooth Clock Bit[1] |
| Reserved | Byte 3~~,~~ bits 3, 4, and 5 | ~~UINT2~~ | 0 | |
| Video Mode | Byte 3~~,~~ bit 6 | ~~Bit~~ | 0 – 3D Mode<br>1 – Dual View Mode | In the Dual View Mode, the left lens shutter offsets are interpreted as offsets for video stream 1 and the right lens shutter offsets are interpreted as offsets for video stream 2. |
| Reserved | Byte 3~~,~~ bit 7 | ~~Bit~~ | 0 | |
| Bluetooth clock phase at Frame Sync Instant (µs) | Bytes 4,5 | UINT16 | 0-624~~312~~ | ~~The value shall not be > 312.~~ |
| Left lens shutter open offset (µs) | Bytes 6,7 | UINT16 | 0-65535 | Special value of 0xFFFF signals glasses are in 2D mode and both shutters shall be opened. When the value of the Frame Sync Period is equal to 0, then this field shall be set to |

| | | | | |
|---|---|---|---|---|
| | | | | 0xFFFF. |
| Left lens shutter close offset (µs) | Bytes 8,9 | UINT16 | 0-65535 | |
| Right lens shutter open offset (µs) | Bytes 10,11 | UINT16 | 0-65535 | |
| Right lens shutter close offset (µs) | Bytes 12,13 | UINT16 | 0-65535 | |
| Frame Sync Period (µs) | Bytes 14,15 | UINT16 | 0-40000 | The value shall not be > 40000. |
| Frame Sync Period Fraction (1/256 µs) | Byte 16 | UINT8 | 0-255 | The fractional part of the Frame Sync Period |

*Table* 8.1*: 3D Broadcast Message Format*

***[Replace with]***

The format of the 3D Broadcast Message is shown in the following table.

| Field | Position | Type | Value | Notes |
|---|---|---|---|---|
| Frame Sync Instant | Byte 0 bit 0 to Byte 3 bit 2 | UINT32 | 3DD Native Bluetooth Clock Bits[27:1]. | Byte 0 bit 0 = 3DD Native Bluetooth Clock Bit[1] |
| Reserved | Byte 3 bits 3, 4, and 5 | | 0 | |
| Video Mode | Byte 3 bit 6 | | 0 – 3D Mode<br>1 – Dual View Mode | In the Dual View Mode, the left lens shutter offsets are interpreted as offsets for video stream 1 and the right lens shutter offsets are interpreted as offsets for video stream 2. |
| Reserved | Byte 3 bit 7 | | 0 | |
| Bluetooth clock phase at Frame Sync Instant (µs) | Bytes 4,5 | UINT16 | 0-624 | |
| Left lens shutter open offset (µs) | Bytes 6,7 | UINT16 | 0-65535 | Special value of 0xFFFF signals glasses are in 2D mode and both shutters shall be opened. When the value of the Frame Sync Period is equal to |

| | | | | |
|---|---|---|---|---|
| | | | | 0, then this field shall be set to 0xFFFF. |
| Left lens shutter close offset (µs) | Bytes 8,9 | UINT16 | 0-65535 | |
| Right lens shutter open offset (µs) | Bytes 10,11 | UINT16 | 0-65535 | |
| Right lens shutter close offset (µs) | Bytes 12,13 | UINT16 | 0-65535 | |
| Frame Sync Period (µs) | Bytes 14,15 | UINT16 | 0-40000 | The value shall not be > 40000. |
| Frame Sync Period Fraction (1/256 µs) | Byte 16 | UINT8 | 0-255 | The fractional part of the Frame Sync Period |

*Table 8.1: 3D Broadcast Message Format*

### 12.3.1 Beacon Format

***[Original text with changes]***

The beacon provides 3D timing information to the Legacy 3DG listening to it. It provides the Frame Sync rising edge relative to the Legacy 3DD Bluetooth clock and shutter control timing relative to Frame Sync (also relative to the Legacy 3DD Bluetooth clock).

All values in the following tables are in little-endian format.

Table 12.11 describes the contents of the Beacon Packet payload used by the Reference Protocol. Any change to the contents of this profile should be specified at the profile level.

| **Field** | **Position** | **Type~~/Size~~** | **Value~~Size~~** | **Comments** |
|---|---|---|---|---|
| Bluetooth clock at rising edge of Frame Sync | Byte 0 bit 0 to Byte 3 bit 2 | UINT32~~Bits[27:0]~~ | 0 to 2^27-1~~28 bits~~ | Bits[27:1] of the Bluetooth Native clock. Byte 0 bit 0 = Bit[1] of the Bluetooth Native clock.~~Includes 4 LSB of the most significant Byte~~. |
| Reserved | Byte 3 bit 3 | ~~(Unsigned)~~ | 0 | Set to 0 by transmitter Expected 0 by receiver |
| Reserved | Byte 3 bit 4 and 5 | ~~Bits[29:28]~~ | 0~~2 bits~~ | Set to 0 by transmitter, ignored by receiver. |
| Dual Video Stream Mode | Byte 3 bit 6 | ~~Bit[30]~~ | 0 or 1~~1 bit~~ | 0 – 3D mode<br><br>1 – Two image stream mode. In this mode left shutter control signal should be interpreted as timing for video stream 1 and Right shutter control information as timing for video stream 2. |
| Reserved | Byte 3 bit 7 | ~~Bit[31]~~ | 0~~1 bit~~ | Set to 0 by transmitter, ignored by |

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|---|---|---|---|---|
| | | | | receiver. |
| Bluetooth clock phase at rising edge of Frame Sync (µ~~u~~s) | Bytes 4,5 | UINT16~~Unsigned~~ | 0-624~~16 bits~~ | Range 0-624~~312~~ |
| Left shutter open delay (µus)<br><br>(Video Stream 1 in dual stream mode) | Bytes 6,7 | UINT16~~Unsigned~~ | 0-65535~~16 bits~~ | Special value of 0xFFFF signals Legacy 3DG to go into 2D mode. |
| Left shutter close delay (µ~~u~~s)<br><br>(Video Stream 1 in dual stream mode) | Bytes 8,9 | UINT16~~Unsigned~~ | 0-65535~~16 bits~~ | |
| Right shutter open delay (µ~~u~~s)<br><br>(Video Stream 2 in dual stream mode) | Bytes 10,11 | UINT16~~Unsigned~~ | 0-65535~~16 bits~~ | |
| Right shutter close delay (µ~~u~~s)<br><br>(Video Stream 2 in dual stream mode) | Bytes 12,13 | UINT16~~Unsigned~~ | 0-65535~~16 bits~~ | |
| Frame Sync Period (µ~~u~~s) | Bytes 14,15 | UINT16~~Unsigned~~ | 0-40000~~16 bits~~ | |
| Frame Sync Fraction (1/256 µ~~u~~s) | Byte 16 | UINT8~~Unsigned~~ | 0-255~~8 bits~~ | |

*Table 12.11: Beacon Packet Payload Fields*

## *[Replace with]*

The beacon provides 3D timing information to the Legacy 3DG listening to it. It provides the Frame Sync rising edge relative to the Legacy 3DD Bluetooth clock and shutter control timing relative to Frame Sync (also relative to the Legacy 3DD Bluetooth clock).

All values in the following tables are in little-endian format.

Table 12.11 describes the contents of the Beacon Packet payload used by the Reference Protocol. Any change to the contents of this profile should be specified at the profile level.

| **Field** | **Position** | **Type** | **Value** | **Comments** |
|---|---|---|---|---|
| Bluetooth clock at rising edge of Frame Sync | Byte 0 bit 0 to Byte 3 bit 2 | UINT32 | 0 to 2^27-1 | Bits[27:1] of the Bluetooth Native clock. Byte 0 bit 0 = Bit[1] of the Bluetooth Native clock. |
| Reserved | Byte 3 bit 3 | | 0 | Set to 0 by transmitter. Expected 0 by receiver |
| Reserved | Byte 3 bit 4 and 5 | | 0 | Set to 0 by transmitter, ignored by receiver. |
| Dual Video Stream Mode | Byte 3 bit 6 | | 0 or 1 | 0 – 3D mode<br><br>1 – Two image stream mode. In this mode left |

| Field | Position | Type | Value | Comments |
|---|---|---|---|---|
| | | | | shutter control signal should be interpreted as timing for video stream 1 and Right shutter control information as timing for video stream 2. |
| Reserved | Byte 3 bit 7 | | 0 | Set to 0 by transmitter, ignored by receiver. |
| Bluetooth clock phase at rising edge of Frame Sync (µs) | Bytes 4,5 | UINT16 | 0-624 | Range 0-624 |
| Left shutter open delay (µs)<br><br>(Video Stream 1 in dual stream mode) | Bytes 6,7 | UINT16 | 0-65535 | Special value of 0xFFFF signals Legacy 3DG to go into 2D mode. |
| Left shutter close delay (µs)<br><br>(Video Stream 1 in dual stream mode) | Bytes 8,9 | UINT16 | 0-65535 | |
| Right shutter open delay (µs)<br><br>(Video Stream 2 in dual stream mode) | Bytes 10,11 | UINT16 | 0-65535 | |
| Right shutter close delay (µs)<br><br>(Video Stream 2 in dual stream mode) | Bytes 12,13 | UINT16 | 0-65535 | |
| Frame Sync Period (µs) | Bytes 14,15 | UINT16 | 0-40000 | |
| Frame Sync Fraction (1/256 µs) | Byte 16 | UINT8 | 0-255 | |

*Table 12.11: Beacon Packet Payload Fields*

*[End of changes for Erratum 5256]*