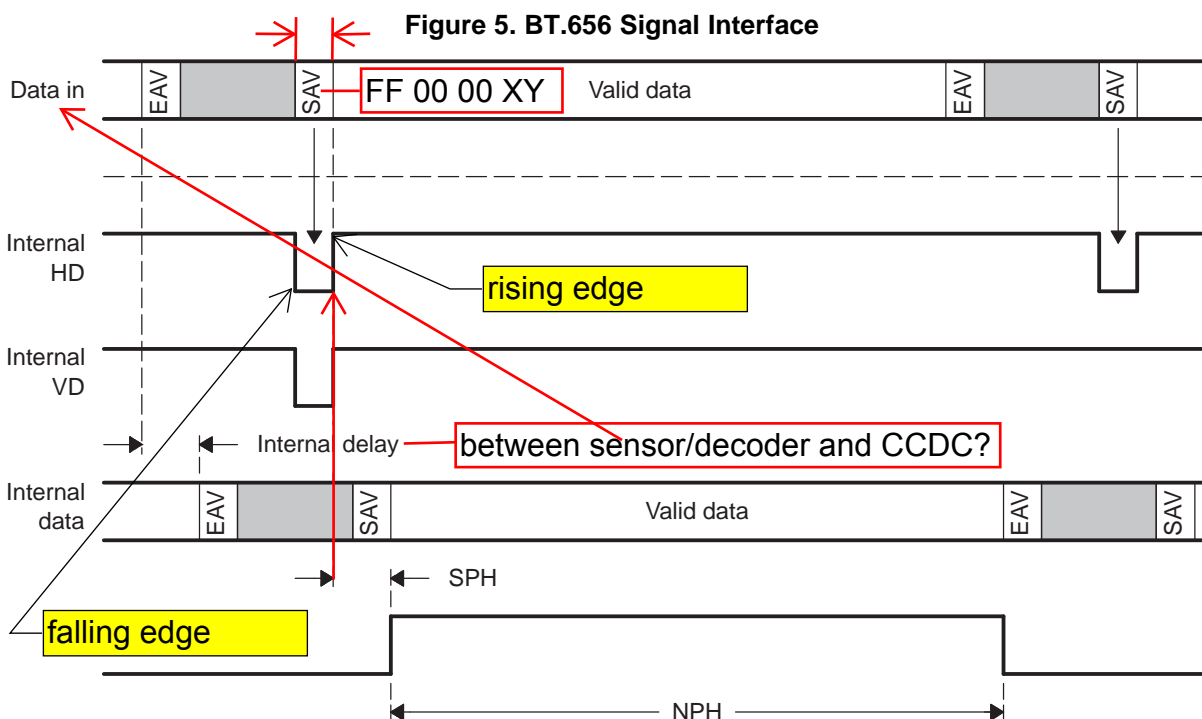


2.2.2 ITU-R BT.656 Configuration Signal Interface Description

Two timing reference codes synchronize HD, VD, and FIELD to the video data. At the start and end of each video data block, the device sends a unique timing reference code. The start code is called the start of active video signal (SAV), and the end code is called the end of active video signal (EAV). The SAV and EAV codes proceed and follow valid data, as shown in Figure 5. HD, VD, and FIELD are generated internally by the CCD controller, based on the SAV and EAV codes. Other CCD controller register settings allow you to control when to read/save valid data to DDR.



2.2.3 ITU-R BT.656 Configuration Protocol and Data Formats

Both timing reference signals, SAV and EAV, consist of a four word sequence in the following format: FF 00 00 XY, where FF 00 00 are a set preamble and the fourth word defines the field identification, the state of vertical field blanking, the state of horizontal line blanking, and protection (error correction) codes. The bit format of the fourth word is shown in Table 4 and the definitions for bits, F, V, and H, are given in Table 5. F, V, and H are used in place of the usual horizontal sync, vertical sync, and blank timing control signals. Bits P3, P2, P1, and P0 are protection (error correction) bits for F, V, and H. The relationship between F, V, and H and the protection (error correction) bits is given in Table 6. To enable error correction, set the ECCFVH bit in the REC656IF register to 1. The CCD controller will automatically detect and apply error correction when the ECCFVH bit is enabled.

When operating in CCIR-656 mode, data is stored in SDRAM according to the format shown in Figure 6 when the PACK8 bit in SYN_MODE is set to 1.

Note that the CCD controller outputs the XY code in the SAV and EAV into the SDRAM. In order to eliminate this, you should set the SPH field in HORZ_INFO to SPH + 1. In addition, the NPH field in HORZ_INFO should be set to accurately represent the number of active pixels.