

Technical information: HV-C20 Camera Field-on-Demand Function

1. General

The HV-C20 is provided with the Field-on-Demand function to record a picture obtained an optional timing by triggering to an image memory, etc. Four modes are switchable by sub-menu.

- ONE trigger mode
- TWO trigger mode
- Fixed shutter mode: 1/1600s (NTSC), 1/1000s (PAL)
- External shutter control mode

(1) Application

This function is effective to shoot moving objects for image processing.

Example: Defect detection of items on belt conveyer.

(2) Difference between the restart/reset (R/R) function and the Field-on-Demand (FD) function.

R/R function: The desired image is after one field with respect to the input pulse.

FD function: The desired image is immediately after the input pulse.

2. Camera Setting

(1) Trigger pulses input

Two trigger pulses are input to D-sub connector (8pin, 9pin).

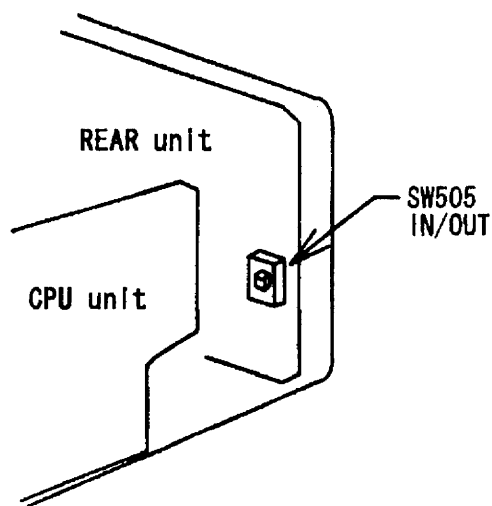
- 8pin: EXT shutter control pulse in (EXT SHT)
- 9pin: V sync initialize pulse in (V INT)

(2) Setting switch on REAR unit

Switch SW505 "IN/OUT" on REAR unit at "IN" position.

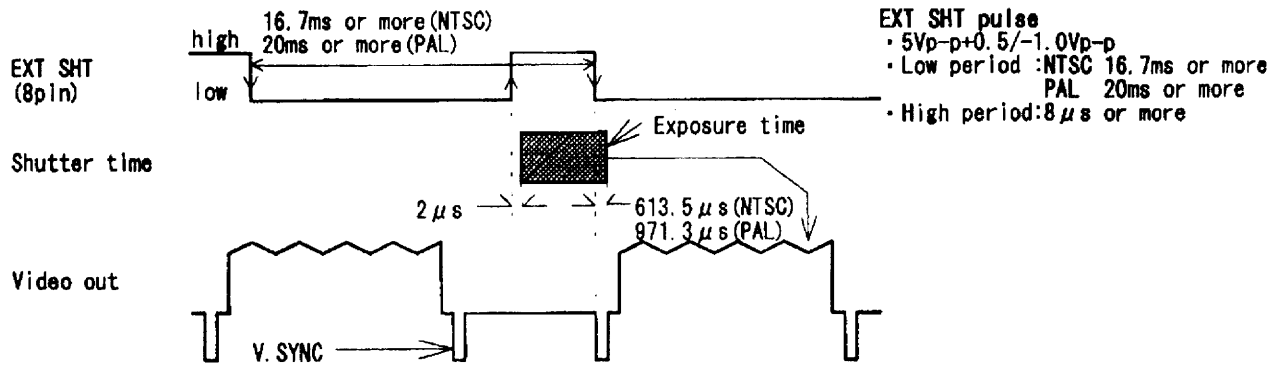
(3) Mode setting

See page 14 and 15 of Operation manual of HV-C20.



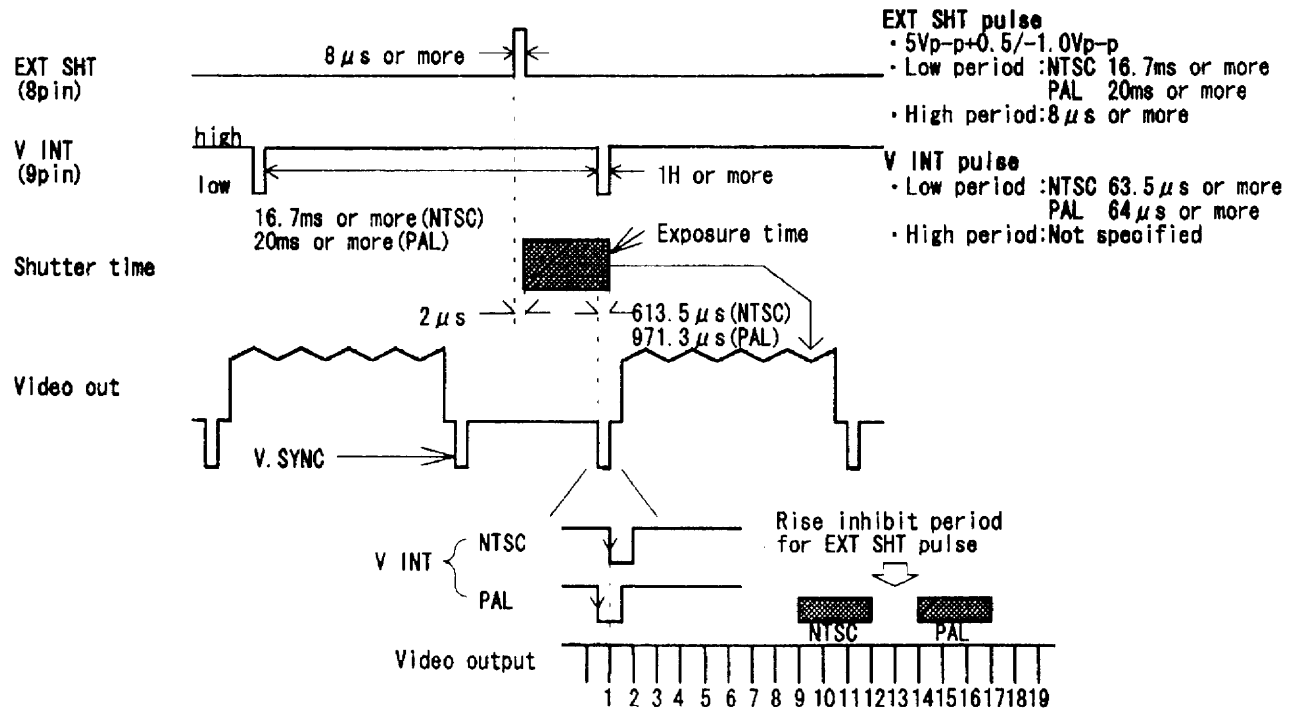
4. interface

4.1 One trigger mode



The shutter is started by the rising edge of the EXT SHT pulse, and V. SYNC is reset by the falling edge of the EXT SHT pulse. (After reset, the first fields delivered)
 A shutter time is controlled by the duration when the EXT SHT pulse is high.
 Only one field image is delivered by one trigger pulse, and a sync signal lasts till the next pulse.

4.2 TWO trigger mode

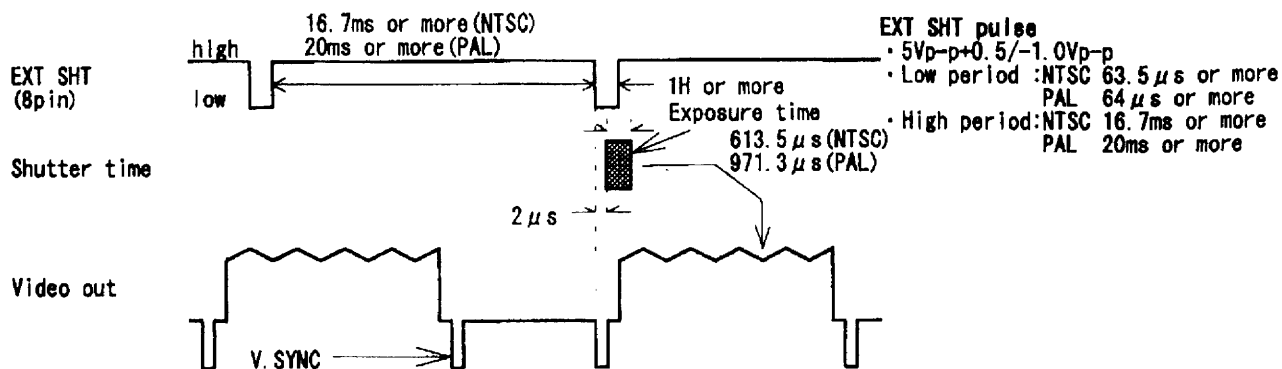


V. SYNC is reset by the falling edge of the V INT pulse. (After reset, the first field is delivered.)

The shutter is started by the rising edge of the EXT SHT pulse.

The EXT SHT pulse is inhibited from the falling edge of the V INT pulse to 9 to 11H (NTSC) / 14 to 16H (PAL) and a correct is not obtained.

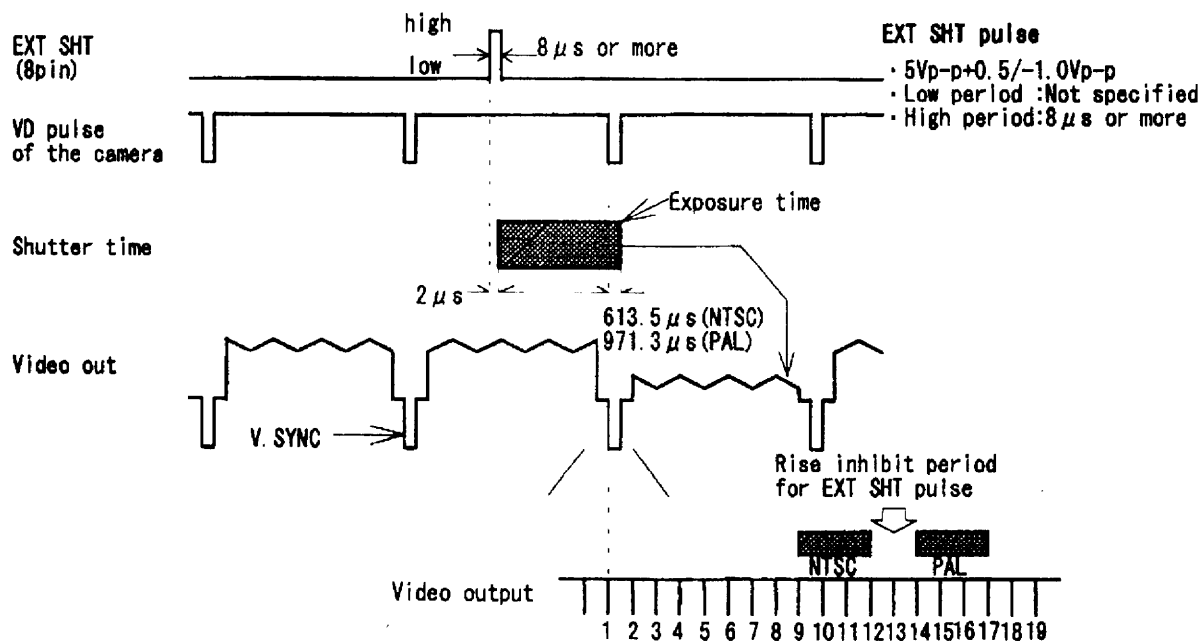
4.3 Fixed shutter mode: 1/1600s (NTSC), 1/1000s (PAL)



The shutter is started by the falling edge of the EXT SHT pulse, and at the same V. SYNC is reset. (After reset, the first field is delivered.)

In this mode, the shutter speed is fixed to 1/1600s (NTSC), 1/1000s (PAL). Only one field is delivered by one trigger pulse, and a sync signal lasts till the next pulse.

4.4 External shutter control mode

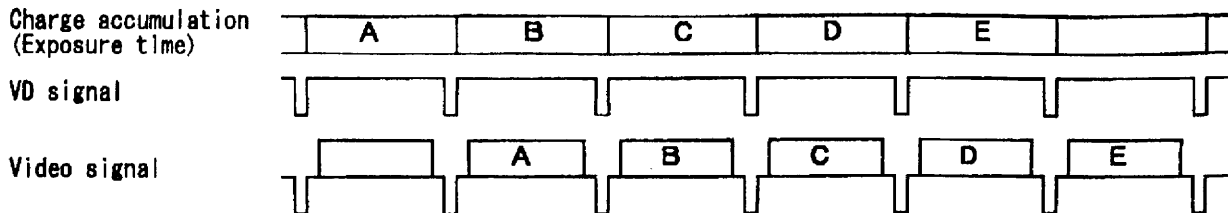


The shutter is started by the rising edge of the EXT SHT pulse. The shutter is effective only for the next field of the pulse input. When the EXT SHT pulse is not supplied, the normal exposure results.

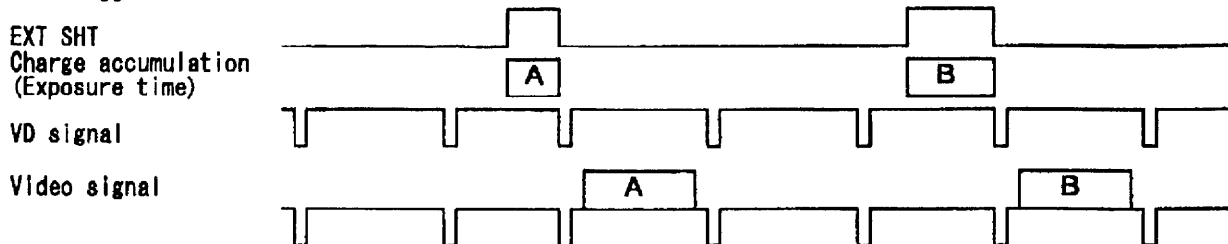
The V. SYNC pulse of the camera is not reset.

3. Timing diagram

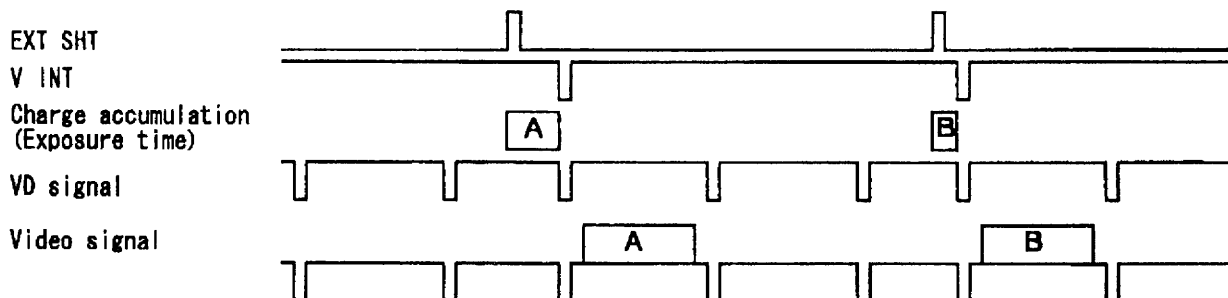
1. Normal operation



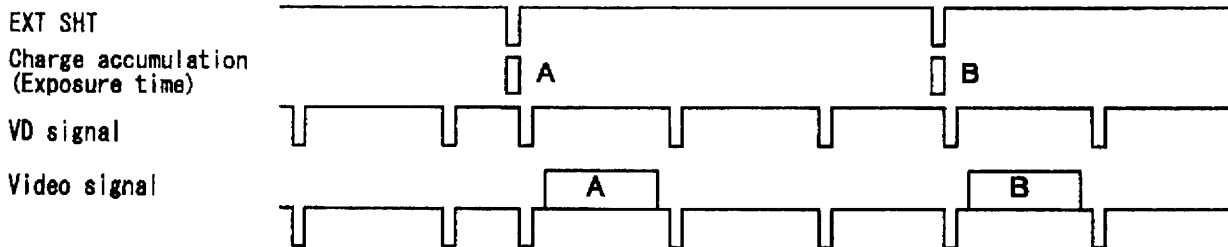
2. One trigger mode



3. TWO trigger mode



4. Fixed Shutter mode



5. Ext. shutter mode

