

Rajshahi University of Engineering & Technology
Department of Computer Science & Engineering

Lab Report No: 01

Course Code: CSE 3104

Course Name: Sessional Based on CSE 3103

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Name of Experiment: The Characteristics of Pulse

Objectives of Experiment:

1. To understand parameters of pulse used in digital communication
2. To understand the influence when pulse signal pass band limited system.

Requiring Equipments:

1. Power Supply (U-2920 A)
2. Signal Source (U-2920 B)
3. Pulse Amplitude Modulation (U-2920C)
4. Digital Source Oscilloscope (2-CH, 60 [MHz])

Experimental Procedures

1. Module and measuring device were prepared. Power was provided to device.
2. Oscilloscope was set to as following:

TIME/DIV 0.25 [ms]

VOLT/DIV 1 [v]

TRIGGER MODE AUTO

TRIGGER SOURCE CH-1

VERTICAL MODE CH-1

INPUT COUPLING DC

SLOPE +

3. FREQUENCY SELECTOR in SIGNAL SOURCE was set to 1 KHz.
4. INPUT COUPLING of oscilloscope was set to GND. DC was set again after making standard line to accord with third line from the bottom by adjusting VERTICAL POSITION terminal.

5. CH-1 was connected to input probe of oscilloscope to CLK terminal of SIGNAL SOURCE, the screen was appeared as Fig.1.

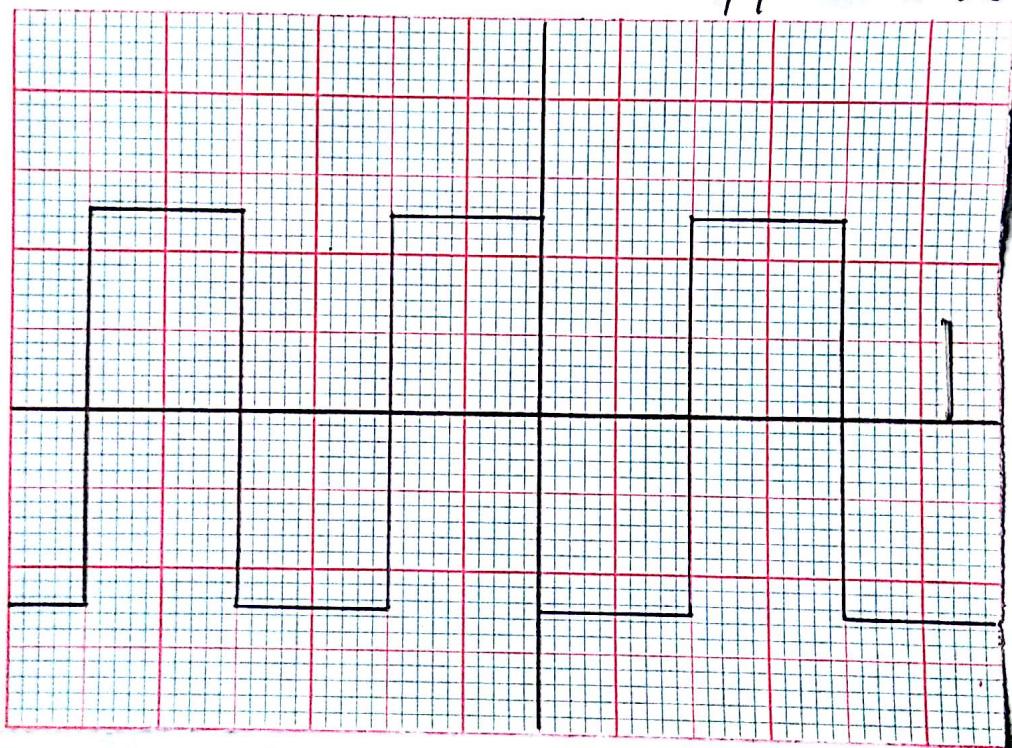


Fig.1: pulse parameter measurement

6. If TIME/DIV of oscilloscope was set to 0.1[μ s] wave form like as fig. 2(a) was appeared. AND then SLOPE was set to (-) and TRIGGER LEVEL was adjusted to display like as Fig. 2(b).

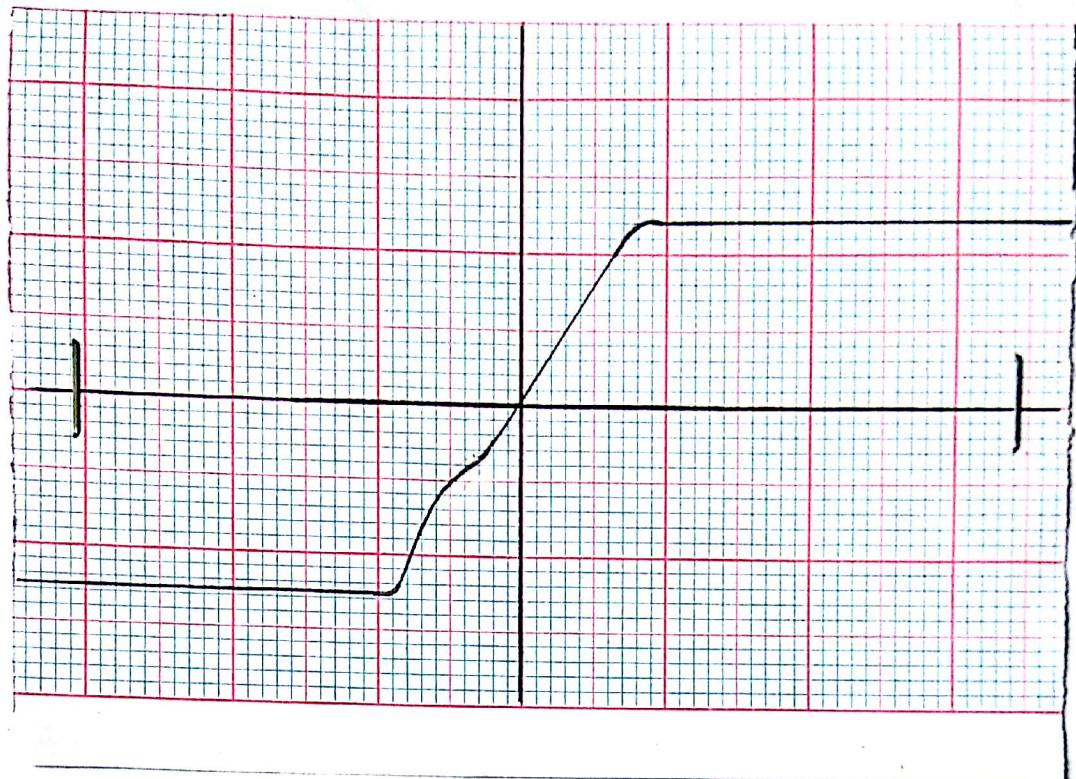


Fig. 2(a) : Rising time of pulse

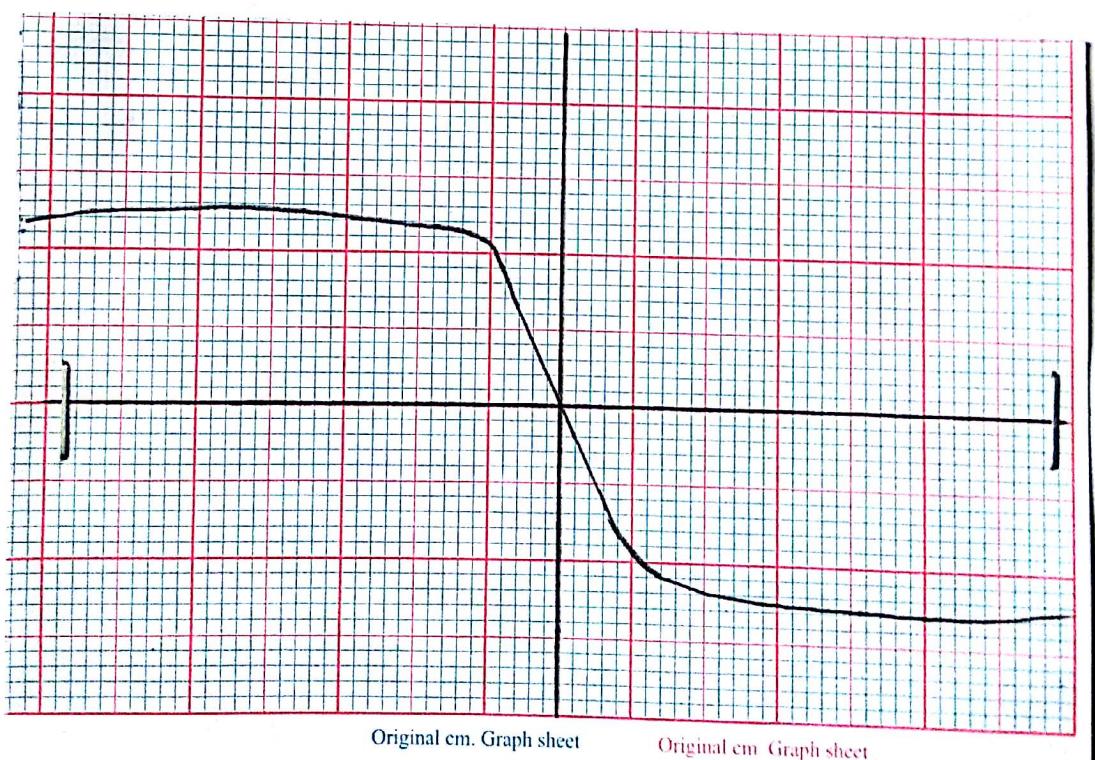


Fig. 2(b) : Falling time of pulse

6. CLK terminal of SIGNAL SOURCE was connected to AUDIO INPUT of PAM module. VOLT/DIV of oscilloscope was set to 2[V] and TIME/DIV to 0.25[ms].

CH-1 input probe of oscilloscope was connected to J1 terminal of PAM module, and Fig. 3 was appeared in oscilloscope screen.

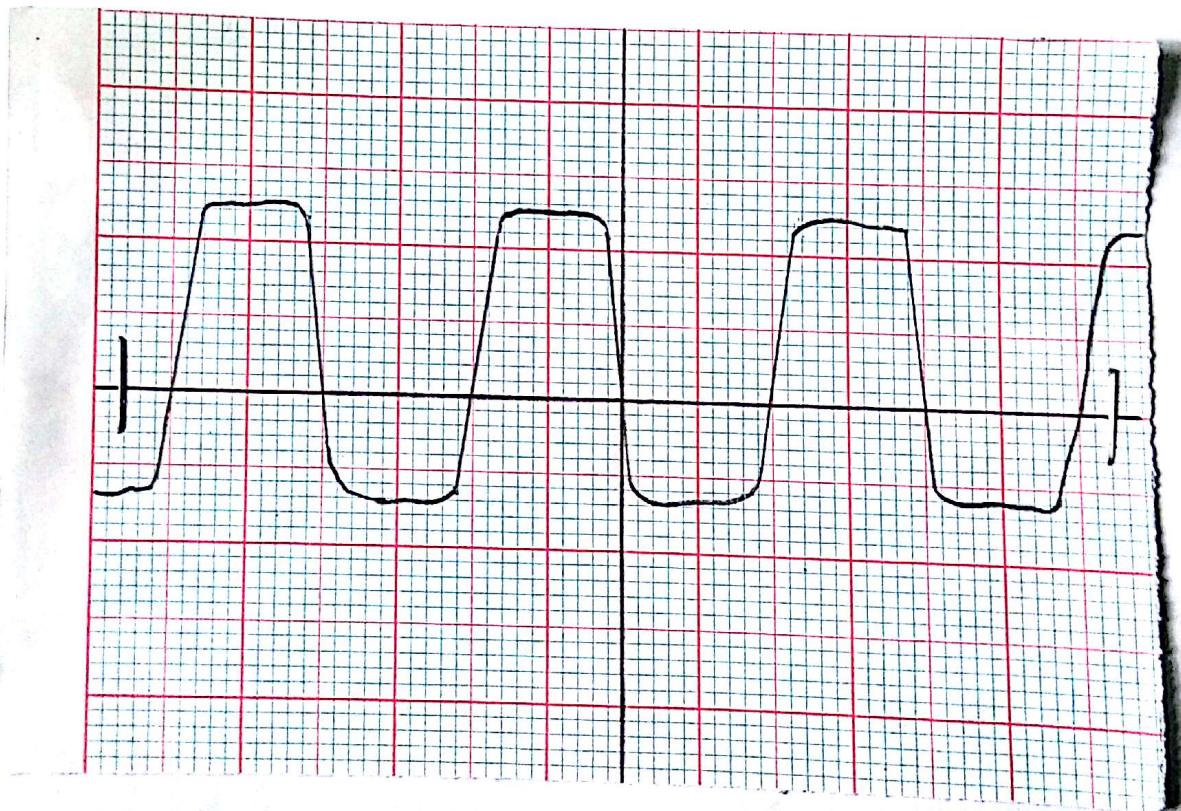


Fig. 3: Output pulse parameters measurement of low-pass filter

7. FREQUENCY SELECTOR to 2 [KHz] in SIGNAL SOURCE, VOLT/DIV of oscilloscope to 2 [V] and TIME/DIV to 0.25 [ms] were set.

The shape of output pulse of low-pass filter was appeared in oscilloscope screen as Fig. 4 by connecting CH-1 input probe of oscilloscope to J1 of PAM module.

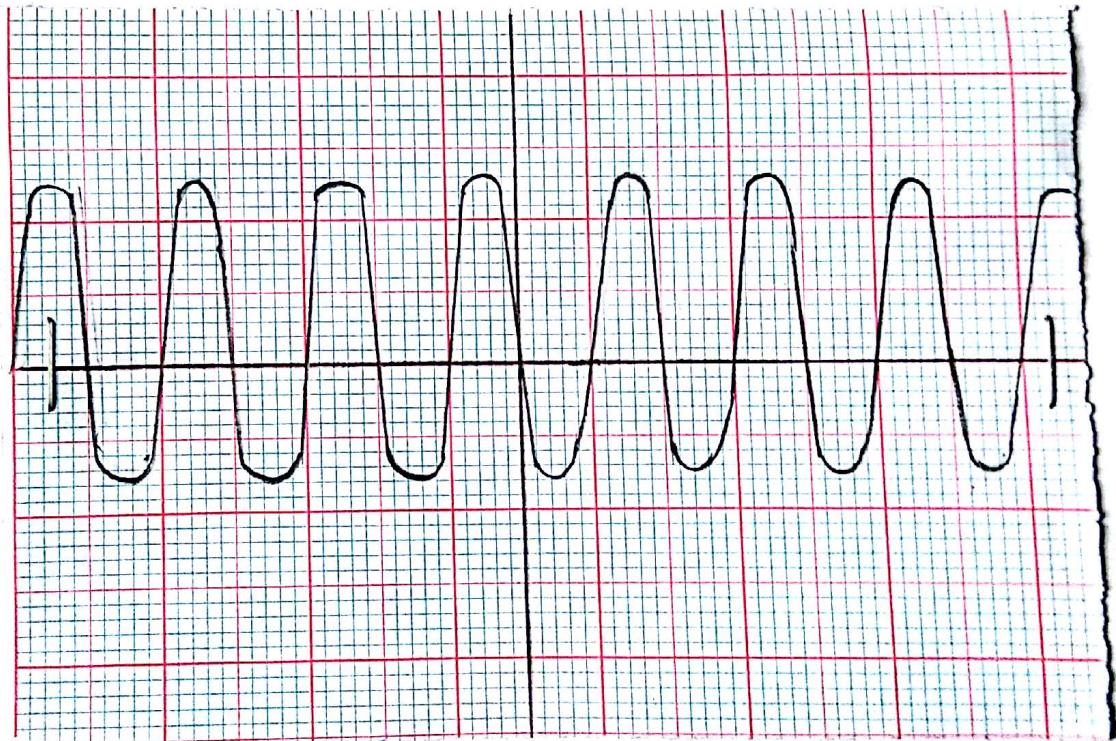


Fig. 4: Output pulse of low-pass filter
(Input frequency 2 [KHz])

8. Same process was repeated by setting FREQUENCY SELECTOR to 4 [KHz] in SIGNAL SOURCE, VOLT/DEV of oscilloscope to 2 [V] and TIME/DIV to 50 [μs].

The shape of output pulse was appeared as Fig. 5.

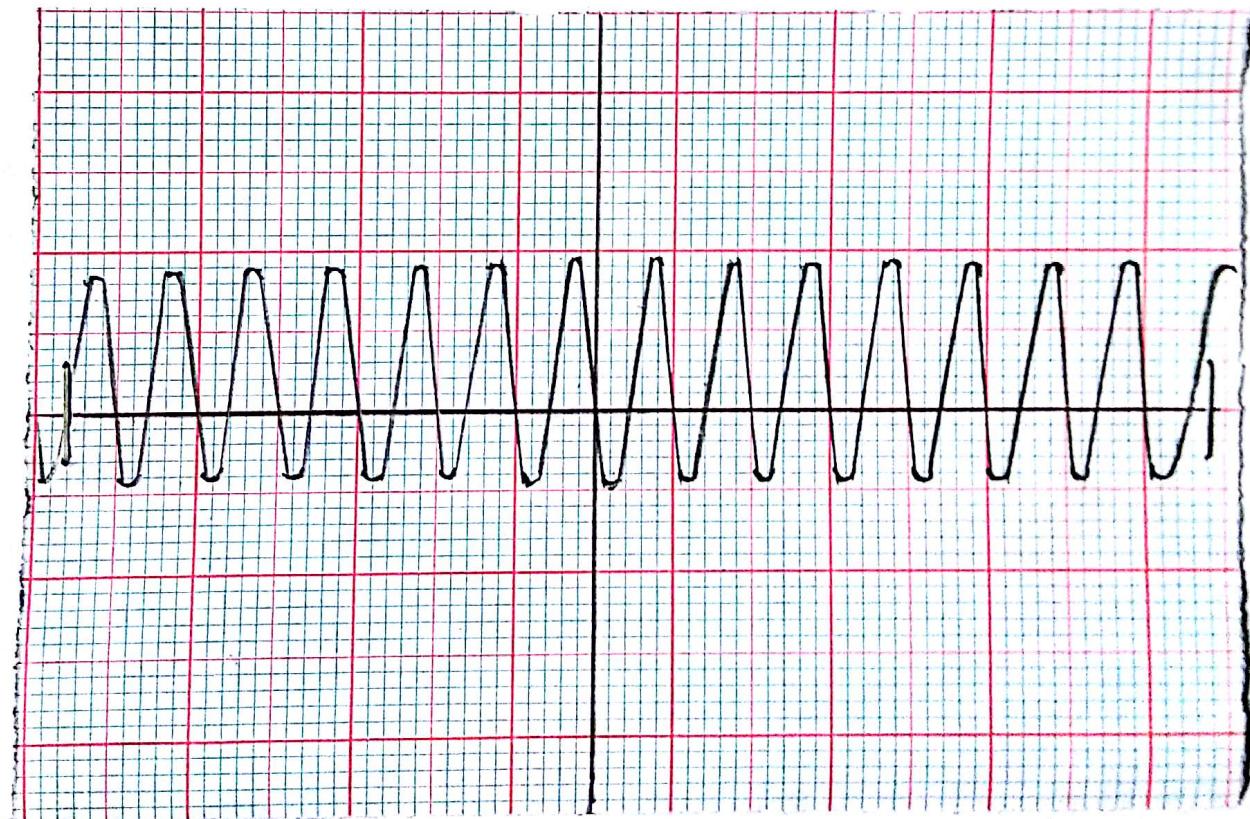


Fig. 5: Output pulse of low-pass filter
(Input frequency 4 [KHz])