this way capacitor C1312 is charged just enough to keep the output voltage +VRAM at a stable value (3V DC).

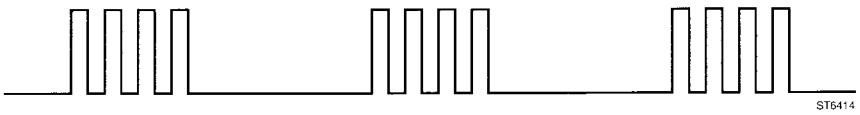

Figure 3.8 Pulse train signal on input A of Schmitt input NAND (Test Point 223)

3.3.5 LCD circuitry

- Introduction

The LCD used in the ScopeMeter is controlled by six LCD driver integrated circuits. These drivers get their information (data- and control signals) directly from the D-ASIC. The microprocessor enables the display when valid data is present.

ScopeMeter models 93 and 95 use a reflective LCD. Model 97 is provided with a transflective LCD with a backlight, which can be switched on or off by the user.

- Detailed circuit description

See figure circuit diagram A1 (figure 10.2).

LCD

The ScopeMeter uses a Super Twisted Nematic Liquid Crystal Display (LCD H1401, see circuit diagram A1, figure 10.2), with a resolution of 240 * 240 pixels.

The picture on the LCD screen is written column (vertical line) after column, rather than row (horizontal line) after row. The LCD screen is divided horizontally in 3 row-sections, each 80 pixels wide and vertically into 3 column-sections, each 80 pixels wide.

LCD drivers

The LCD display is controlled by the D-ASIC, via six LCD drivers:

- three LCD row drivers: D1404, D1406, D1407
- three LCD column drivers: D1401, D1402, D1403

Description of the LCD drivers input-/output signals:

LCD outputs Y1...Y80 and X1...X80

These outputs are connected to the LCD matrix. Every column driver serves 80 pixel columns of the LCD. Every row driver serves 80 pixel rows. The output signals are staircase signals, with levels equal to the V1...V6 voltages.

NOTE: On the output of every LCD driver, a Test Point is provided (TP207...TP212). When the driver is working properly, a staircase voltage can be measured on these test points.

- Data inputs D0...D3 (row drivers only!)

The actual display data coming from the D-ASIC is sent via the DRIVERBUS to the LCD drivers D0...D3 inputs.

- Terminal input voltages V1...V6

Out of these DC signals, with V_{EE} = -20 V, the LCD drivers generate the staircase signals. The input voltages V1...V6 are generated by the LCD supply section.