D1024AR

User Guide

Features

The ***D1024AR*** interface card enables the replacement of standard CRT displays with NEC high-resolution-analog Full color TFT displays (NL10276AC24-02 -**12.1"** and NL10276AC28-01-**14.1"**) driven from the standard RGB video signals of PCs and workstations.

Main technical specifications are as follows:

- VGA , SVGA and XGA standard compatible[1]
- Video modes with a resolution lower than the TFT resolution are expanded and use the entire display area (as MultiSync™ CRTs).
- Color resolution up to 16 Million color panels.
- Low power consumption,
- Small size : 71 x 64.5 x 15 mm or 71 x 48 x 15 mm (with pre-cut PCB)
- Parameters settings by keyboard: pixel frequency, horizontal and vertical centering, clock phase - function displayed by On Screen Display ; **O.S.D.**
- EEPROM memorization of current parameters.

Introduction

This manual provides the hardware related instructions to install an ***D1024AR*** interface card. It explains how to supply the card, connect the card to the VGA source signals and to the TFT LCDs, and to set up the parameters to the user's needs. The connectors, keyboard's display are fully described.

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Disclaimer

[1] *60 Hz non interlace*

I/O Headers

There are 7 headers on the board:

JP1: Analog Video input (for HE10- connector)

JP2: Power supply input - 4 pins, HE14 single row,

JP3: LCD output - 26 pins, HE14 double row,

JP4: for keyboard OSD adjust parameters

JP5: No connected (JTAG connector)

Connectors

JP1 Connector

Pin	Signal Description
1	Red
2	GND
3	Green
4	GND
5	Blue
6	GND
7	V Sync.
8	GND
9	H Sync.
10	GND

JP2 Connector

This connector supplies power and ground to the card. The connector is made by AMP and may be order from RS components using RS 532-349.

Pin #	Signal	Description
1	+5V	General power supply (5 Volts) of the board
2	GND	General ground of the board
3	GND	General ground of the board
4	+12V	General power supply (12 Volts) of the board

JP4 Connector

JP4 interfaces the optional keyboard. . The connector is made by AMP and may be order from RS components using RS 532-406. This may also provide power supply for the card.

Pin	Signal	Description
1	+.OSD	+ for Increase the parameter
2	BRTH	to potentiometer brightness
3	-.OSD	- for decrease the parameter
4	BRTL	to potentiometer brightness
5	M.OSD	M Menu for OSD
6	GND	General ground of the board

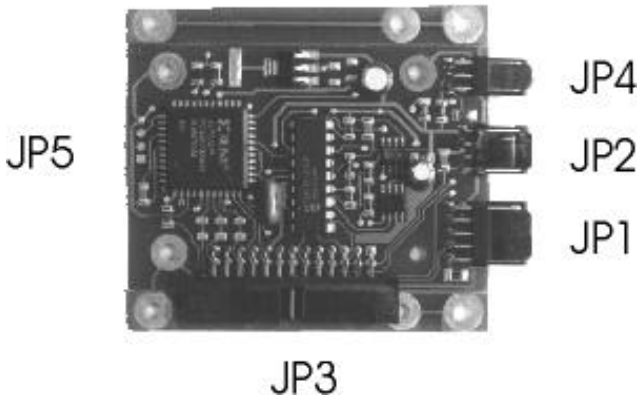

Figure 1: Connector Locations

Settings - Keyboard and O.S.D display

Keyboard and O.S.D display

A simplified keyboard, composed of 3 push-buttons, is provided in order to ease ***D1024AR*** card parameters settings. This key board is supplied for use with initial configuration. One unit is supplied with every 5 ***D1024AR*** cards, if it is required for production purposes please contact Displaze for pricing information.

The functions of these buttons are:

+ button : Increase the actual parameter,

M button : Change to the next OSD function,

- button : Decrease the actual parameter.

You can step through the parameters by pressing the middle button. OSD display which parameter you can actually change. The OSD Symbol's are:

-  ① Pixel adjustment frequency,
-  ② Digitalization clock phase,
-  ③ Horizontal centering
-  ④ Vertical centering,

The recommended procedure to set the parameters is as follows:

1. Center the screen horizontally ③ : Set the displayed picture to the maximum right position of the TFT.
2. Pixel frequency adjustment ① : Changing this parameter, get the displayed picture to take the maximum possible size. It may be necessary to move the displayed picture a bit more to the right of the screen than previously.
3. Clock phase ② : Try to change the clock phase (pressing INC will change to positive phase, DEC to negative phase). One phase should give you better result than the other one.
4. Center the screen vertically ④ : it may happen that the display is continuously scrolling down if this parameter is not set correctly. Pressing the INC / DEC buttons, you should be able to get a stable picture, and then to center it on the screen.

NOTE:

2 different sets of parameters are maintained: one for Text mode, and one for Graphic mode. Therefore, the above described procedure should be made twice: once in Text mode, and once in Graphic mode. Mode detection and parameters selection is controlled by ***D1024AR*** card.

The parameters are saved in an on-board EEPROM after a few seconds without pressing any button. Thereafter, they are recovered at power-on.

✗ In case of a bad processing, turn **OFF** the set, a configuration per default is possible if you simultaneously press **+** button and **-** button and if you turn **ON** the board.

Standard connections

Connection OUTPUT with NEC 12.1" part.: NL10276AC24-02

Pin	Description
1	CNT CLK
2	VDDB
3	CNT DATA
4	VDD
5	CNT STB
6	VCC
7	GND
8	BRTH
9	GND
10	BRTL
11	GND
12	POWC
13	GND
14	BRTC
15	GND
16	CLK
17	GND
18	H Sync.
19	GND
20	V Sync.
21	GND
22	Red
23	GND
24	Green
25	GND
26	Blue

➔ *Important* ***: This is preliminary specification please check the output pin out before connect to the display.***

Mechanical Dimensions

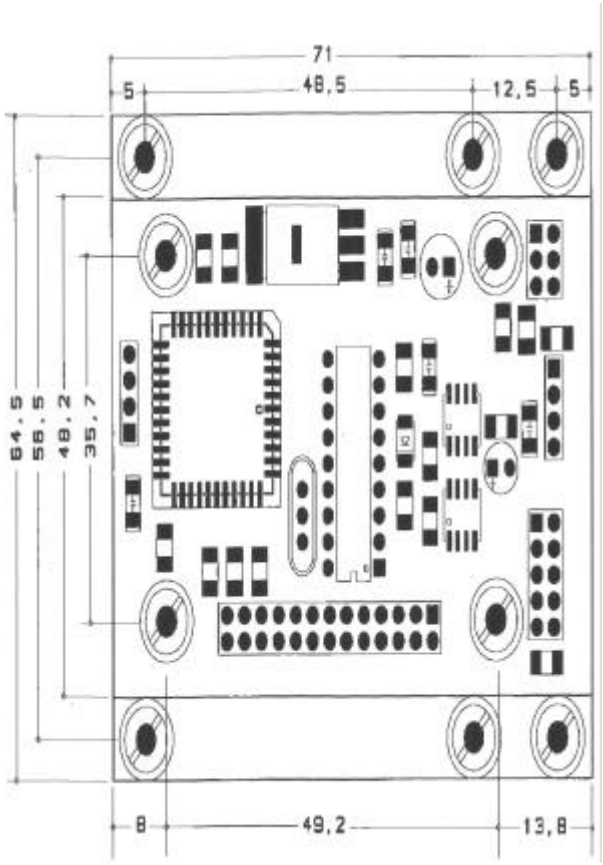

Figure 2: PCB Dimensions