NC-830A PC/104 VGA Module

with Socket for DiskOnChip Flash Disk

USER'S MANUAL

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1

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

CHAPTER 2: ALG 2032+ HIGH-PERFORMANCE VGA

CHAPTER 3: HARDWARE CONFIGURATION

CHAPTER 4: DiskOnChip FLASH DISK SSD

CHAPTER 1

INTRODUCTION

This chapter shows the information about NC-830 and its specifications.

Sections include:

*** Specifications**

*** Safety precautions**

3

1-1 SPECIFICATIONS

***VGA CHIP & FEATURES:**

Realtek ALG 2032+ high-performance VGA single chip support up to 1024x768 in 16/256 Colors and 1280x1024 in 16 colors non-interlaced.

The chip build in advanced form of video acceleration consisting of color space conversion and XY scaling. Color space conversion convert YUV to RGB data for software MPEG and AVI playback usage,

it also allows true color 1024x768 just using 1MB, but other brand need

4MB. XY scaling allows images to be scaled to full screen up to 30 pfs.

This scaling technology allows images to be scaled to full screen with

no performance degradation while being displayed in true-color.

***MEMORY:**

On Board 1MB or 2MB Display Memory.

***BUS EXPANSION SUPPORT:**

PC/104 Bus.

***STORAGE TEMPERATURE:**

-40℃ TO 80℃.

***OPERATING TEMPERATURE:**

0℃ TO 60℃.

***SYSTEM POWER REQUIREMENT:**

DC Voltage: +5V, minimum +4.75V, maximum 5.25V.

***BOARD DIMENSION:**

3.45”(L) X 3.78”(W) (90mm x 96mm)

*** OPTIONS:**

32-pin socket for M-System DiskOnChip Flash Disk

1-2 SAFETY PRECAUTIONS

Follow the messages below to avoid your system from damage:

1. Avoid your system from static electric power on all occasions.

2. Stay safe from the electronic shock. Don't touch any components of this card when the power is ON. Always disconnect power when the system is not in use.

3. Remove power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

5

CHAPTER 2

* * * *ALG 2032+ VGA* * * *

This chapter shows the information about ALG 2032+ VGA functions.

Sections include:

*** Introduction**

*** Technical Specifications**

*** Driver Installation**

2-1 INTRODUCTION

The NC-830 building the ALG2032+ VGA Chips is a highly advanced graphics and video processor that contains a fully integrated RAMDAC and clock.

Built- in Video acceleration

The ALG2032+ includes an advanced form of video acceleration consisting of color space conversion and scaling. Color space conversion converts YUV to RGB data and is required for software MPEG and AVI playback applications. The technology used in the ALG2032+ allows true-color video in 1024x768 resolution with only one megabyte of DRAM compared to the up to four megabyte of DRAM required by competing products.

To play up to 30 fps in full screen, the ALG2032+ uses an advanced XY scaling technology. This scaling technology allows images to be scaled to full screen with no performance degradation while being displayed in true-color.

Window 95 Plug and Play

Using a Windows 95 system along with a DDC compatible monitor assures complete plug and play operation. The ALG2032+ automatically detects the monitor type and sets the maximum refresh rate allowed ensuring the user of a flicker free display and simplifies integration of the graphics subsystem.

Hardware Features

- **Integrated RAMDAC 4, 8, 16, 24 bit-per-pixel graphics**
- **Integrated Clock Full 256 Windows ROPS Support**
- **Integrated 32K BIOS Rectangle BitBlt**
- **160 Pin Package Rectangle Fill and Copy**
- **512K to 1 MB Support Monochrome Color Expansion**
- **Green PC Support Display List Polly Line**
- **Plug and Play Hardware Cursor**
- **Windows Mask Map**
- **ISA-Bus Compatibility**

2-2 TECHNICAL SPECIFICATIONS

Resolution	Colors	Vertical Refresh (Hz)	Mode
1280x1024	16	43I	Non-Interlaced
1024x768	16	75	Non-Interlaced
1024x768	256	75	Non-Interlaced
800x600	16	75	Non-Interlaced
800x600	256	75	Non-Interlaced
800x600	64K	60	Non-Interlaced
640x480	16	75	Non-Interlaced
640x480	256	75	Non-Interlaced
640x480	64K	75	Non-Interlaced
640x480	16.7M	60	Non-Interlaced

2-3 DRIVER INSTALLATION

Software support/application Drivers for:

- **Windows 3.1/ 95 / NT**
- **ADI 4.2**

Please find all information about Driver installation from 'NCreadme.txt' root directory from the diskette / CD-ROM included with the board.

CHAPTER 3

HARDWARE CONFIGURATION

This chapter shows you the connectors & jumper settings, and components' locations.

Sections include:

*** Jumper/Connector Quick Reference Table**

*** Components' Locations**

*** Configuration and Jumper settings**

*** Connector Pin Assignments**

9

3-1 JUMPER/CONNECTOR QUICK REFERENCE TABLE

Feature Connector.....	CN3
VGA Connector.....	CN4
PC/104 Connector.....	CN5
Default +5V Connector	JP1
VGA IRQ Selection.....	JP5
M-System DiskOnChip Flash Disk Address Selection	JP7

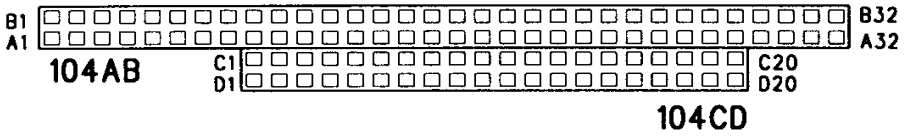
3-2 FEATURE CONNECTOR (CN3)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	Video D0	2	GND
3	Video D1	4	GND
5	Video D2	6	GND
7	Video D3	8	EVIDEO
9	Video D4	10	ESYNC
11	Video D5	12	EVDCLK
13	Video D6	14	NC
15	Video D7	16	NC
17	CLOCK	18	GND
19	BLANK	20	GND
21	H-SYNC	22	GND
23	V-SYNC	24	GND
25	GND	26	NC

3-3 VGA CONNECTOR (CN4)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DACRD
13	H-SYNC	14	V-SYNC
15	DACWR	16	NC

3-4 PC/104 CONNECTOR PIN ASSIGNMENT (CN5)



The PC/104 can support multi-pieces of PC/104 modules. This card has two connectors: one(104AB) consists of 64-pin dual-in-line header, the other one (104CD) consists of 40-pin dual-in-line header.

104AB				104CD			
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	IOCHK	B1	GND	C1	GND	D1	GND
A2	SD7	B2	RESETDRV	C2	SBHE	D2	MEMCS16
A3	SD6	B3	VCC	C3	LA23	D3	IOCS16
A4	SD5	B4	IRQ9	C4	LA22	D4	IRQ10
A5	SD4	B5	-5V	C5	LA21	D5	IRQ11
A6	SD3	B6	DRQ2	C6	LA20	D6	IRQ12
A7	SD2	B7	-12V	C7	LA19	D7	IRQ15
A8	SD1	B8	0WS	C8	LA18	D8	IRQ14
A9	SD0	B9	+12V	C9	LA17	D9	DACK0
A10	IOCHRDY	B10	GND	C10	MEMR	D10	DRQ0
A11	AEN	B11	SMEMW	C11	MEMW	D11	DACK5
A12	SA19	B12	SMEMR	C12	SD8	D12	DRQ5
A13	SA18	B13	IOW	C13	SD9	D13	DACK6
A14	SA17	B14	IOR	C14	SD10	D14	DRQ6
A15	SA16	B15	DACK3	C15	SD11	D15	DACK7
A16	SA15	B16	DRQ3	C16	SD12	D16	DRQ7
A17	SA14	B17	DACK1	C17	SD13	D17	VCC
A18	SA13	B18	DRQ1	C18	SD14	D18	MASTER
A19	SA12	B19	REFRESH	C19	SD15	D19	GND
A20	SA11	B20	SYSCLK	C20	KEY PIN	D20	GND
A21	SA10	B21	IRQ7				
A22	SA09	B22	IRQ6				
A23	SA08	B23	IRQ5				
A24	SA07	B24	IRQ4				
A25	SA06	B25	IRQ3				
A26	SA05	B26	DACK2				
A27	SA04	B27	TC				
A28	SA03	B28	BALE				
A29	SA02	B29	VCC				
A30	SA01	B30	OSC				
A31	SA0	B31	GND				
A32	GA0	B32	GND				

3-5 Default +5V Connector (JP1)

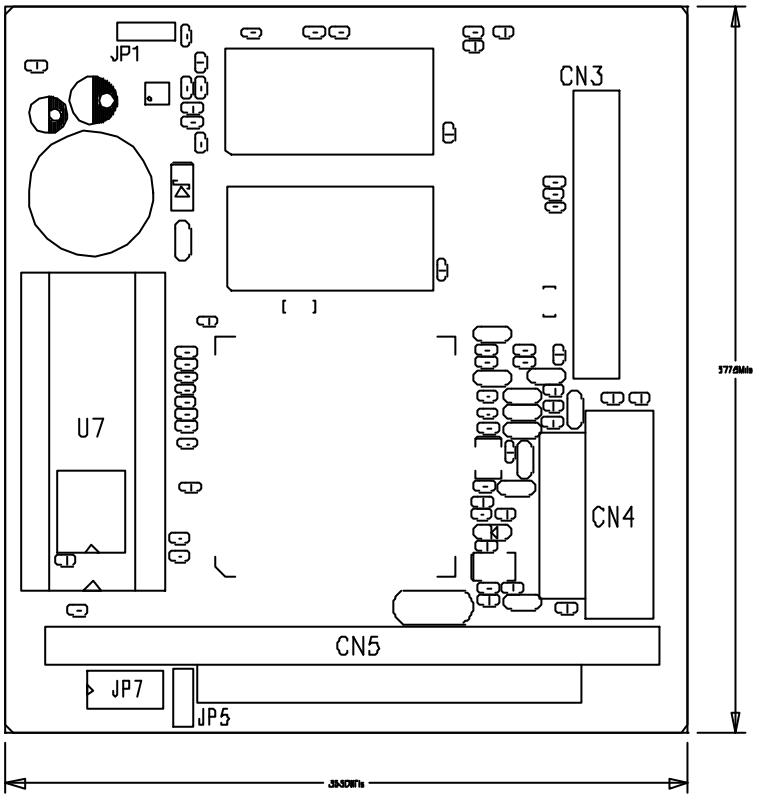
Default 1-2ON.

3-6 VGA IRQ SELECTION (JP5)

FUNCTION SELECTION	JUMPER SETTING
IRQ9	1-2 ON
IRQ7	2-3 ON

3-7 M-SYSTEM DiskOnChip FLASH DISK ADDRESS SELECTION (JP7)

ADDRESS SELECTION	JUMPER SETTING			
	Pin 1& 2	Pin 3& 4	Pin 5& 6	Pin 7& 8
C000	ON	OFF	OFF	OFF
C800	OFF	ON	OFF	OFF
D000	OFF	OFF	ON	OFF
D800	OFF	OFF	OFF	ON



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CHAPTER 4

DiskOnChip Flash Disk SSD

This chapter shows the information about M-System DiskOnChip SSD functions.

Sections include:

* **Preface**
* **Quick Installation Guide**
* **Utility Reference**

13

4-1 Preface

The NC-830 features a 32-pin socket to support DiskOnChip Flash Disk SSD function. The DiskOnChip can be build on board by order. The NC-830 is designed to use the DiskOnChip single chip Flash Disk to plug into a standard 32-pin socket which built on board. The DiskOnChip Flash Disk should be mapped into an 8K Byte window in the BIOS expansion address space of the NC-830 mini board which is usually located between address 0C0-00H to 0D800H. The NC-830 can contain the operating system in DiskOnChip to allow systems to boot without a hard disk.

The DiskOnChip can install standard MS-DOS and the DOS can boot from DiskOnChip, its command is fully DOS Command compatible, such as Del, Deltree, Format, Copy, Xcopy, MD....., users can read and write DOS Command or data to DiskOnChip same as using Hard Disk Drive.

Users can take this DiskOnChip as physical HDD and its priority is software selectable. For example, if system have one HDD, either HDD & DiskOnChip could be assigned as C or D Drive. When having two HDD (Drive C & Drive D), the DiskOnChip could be assigned as C, D, E Drive. If the system don't have HDD, the DiskOnChip will be taken as C drive only. When it is taken as C drive, it can boot system just same as using Hard Disk Drive.

The capacity of DiskOnChip have 2MB, 4MB, 8MB, 12MB, 24MB, 40MB 72MB and 144MB option.

The location for M-System DiskOnChip socket is U7.

4-2 Quick Installation Guide

1.Make sure the NC-830 mini board SBC is power OFF

2.Plug the DiskOnChip chip into socket U7. Verify the direction is correct (pin1 of the DiskOnChip is aligned with pin1 of the U7 socket).

3.Power ON the system.

4.During Power ON, you may observe the message displayed by the DiskOnChip SSD when its drivers will automatically loaded into the system's memory.

5.At this stage the DsikOnChip can be accessed as any disk in the system.

6.If the DiskOnChip SSD is the only disk in the system, it will appear as the first disk (drive C:).

7.If there are more disks besides DiskOnChip, the DiskOnChip will appear by default as the last drive.

8.The DiskOnChip can be used immediately by "Format" procedure.

Warning:

Be careful when you "Format" DiskOnChip, don't make wrong format to the HDD which you are using. It better to use Floppy Disk Drive to "Format" the DiskOnChip. Make sure your DiskOnChip is C or D, E,..

4-3 Utility Reference

If you need more information beside the diskette, please reach the M-System web www.m-sys.com to get the detail information.