Mooncell

Shenzhen Mooncell Electronics Co., Ltd

FPGA Receiving Card

A320 Product Specifications

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Content

Updates History

File Version	Released Date	Updates Records
V3.0	31/03/2020	First Edition

1 Product Overview

Product Introduction

*A320 is a receiving card that specially designed for small pixel pitch led display and is fully researched and developed by Mooncell; it adopted 8x HUB320 (26PIN) interfaces; it can supports the maximum 32 groups of the parallel connection data;the maximum loading capacity could reach up to 512*640 pixels; with strong processing ability, supper reliability and high competitive price.*

Product Features

- *It has the MCU design,which has improved the the flexibility of the product application.*
- *It supports the hardware online reset function*
- *With strong LED Driver IC compatibility.*
- *It has the function to read the information of the module*
- *It supports to monitor the power status and detect the temperature*

Application Scenarios

It could be widely used for high-end Small Pixel Pitch LED display area that requires high standards; and has significant advantages in application scenarios such as led rental display, TV Broadcast, LED display for respectable Event,High-end project,etc.

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2 Function Introduction

Displaying Effect

It supports pixel level brightness and Chroma Calibration	Using it with the Mooncell Calibration Software to calibrate each one of the pixels on its brightness and Chroma. It can effectively eliminate the Chromatic aberration so as to enhance its consistency of the brightness and Chroma to a high level and result in a better displayed effects.
Multiple Solutions of the Displayed Effects are Supported	Using it with Monncell AutoLED Software, the Refresh and Grey Scale performances are able to take the precedence over other settings.
The Images on the led screen can be rotated 90 degree in a factor of multiple times	Using it with Mooncell AutoLED Software.
The images can be zoomed in or out	Using it with Mooncell AutoLED

Enhanced Operability:

The Receiving Card is Supported to detect its own Sequence number	Using the Network Port testing function on Mooncell AutoLED Software, the receiving card serial number and the Network Port Information will be displayed on the target cabinet. Users will be able to get to know the locations of the receiving cards as well as its Connection diagram.
Data Port User-Defined is supported	Using it with the Mooncell AutoLED Software, you can detect and edit the output

	data of the receiving cards.
To build up a complicated cabinet is supported	*On AutoLED Software, there is an 'Advanced Setting', from here you can quickly arrange or structure the modules at your option.*
To structure a complicated Led Screen is supported	*On AutoLED Software, there is a "Complicated Led Screen Connection", from here you can quickly arrange or structure the cabinet modules on your option.*
To read the information of the module(customized)	*It supports to read the module information that is stored in the special chip that has adopted by the manufacturer so as to realize to intelligently debug and manage the led screen.*

Hardware Stability

Ethernet Cable Backup(Hot Backup)	*The main cable will be having the loop connection. If there's one cable breaks then still there will have another one to make sure the led display work properly.*
	Dual receiving cards backup is supported(Dual Circuit backup design) Customized :when the main working receiving card fails, the other one (backup) will take its job to keep the led display working properly.

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Smart Software and Hardware Stability

The receiving card can read the configuration data back from where it has been stored	*You will be able to do this on Mooncell AutoLED Software.*
It supports to detect the error rates of the network cable	*On the Mooncell AutoLED Software, you can detect the network cable connectivity in real time to tell the condition of the network cables, so that you can get rid of any errors immediately.*
Communication Monitoring Function	*On Mooncell AutoLED Software, you can monitor the Working Status of the receiving cards in real time.*
Dual Power Supplies Backup is supported	*2 Power Supplies can be connected simultaneously and the working status can be detected. Whenever there's a power supply failure, it can be detected, the system then will automatically decrease the brightness of the led screen so that it can still keep working properly*
It supports to detect the voltage(customized)	*It will detects the voltage status of the receiving cards.*
It supports to detect the temperature(customized)	*The operating temperature of the receiving cards could be detected.*
It supports to detect the power status(customized)	*The power status of the power supplies could be detected.*
LCD Module is supported(Customized)	The LCD Module can be connected to the HUB board to display the temperature, voltage, single running time and total running time of the receiving cards.
It supports the reset function	*Once the online upgrading finished, it could automatically reset the hardware.*

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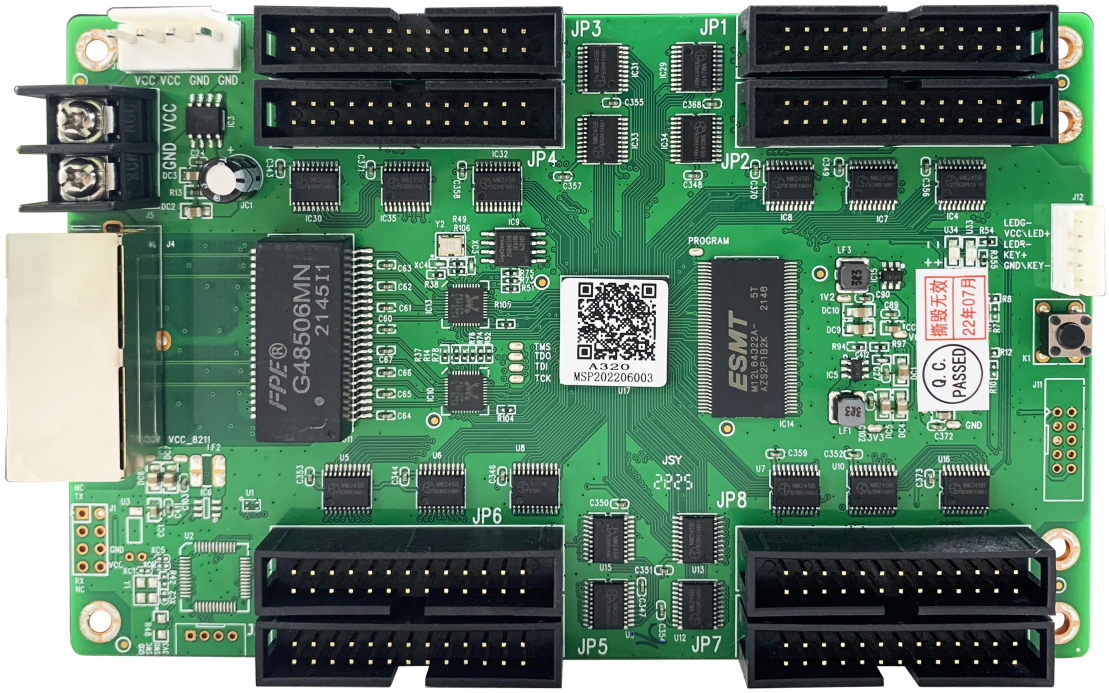
3Product Parameters

Basic Parameters

RGB Parallel	The Maximum Loading Capacity(Pixels)	Loading Capacity After lightness Calibrating （Pixels）	Loading Capacity after Color Calibrating(Pixels)
32 Groups	512*640	512*640	512*512

Single Network Pot Cascading Quantity	Scanning Lines Supported		
≤1000PCS	1-64 Scan		

Hardware Introduction



Output

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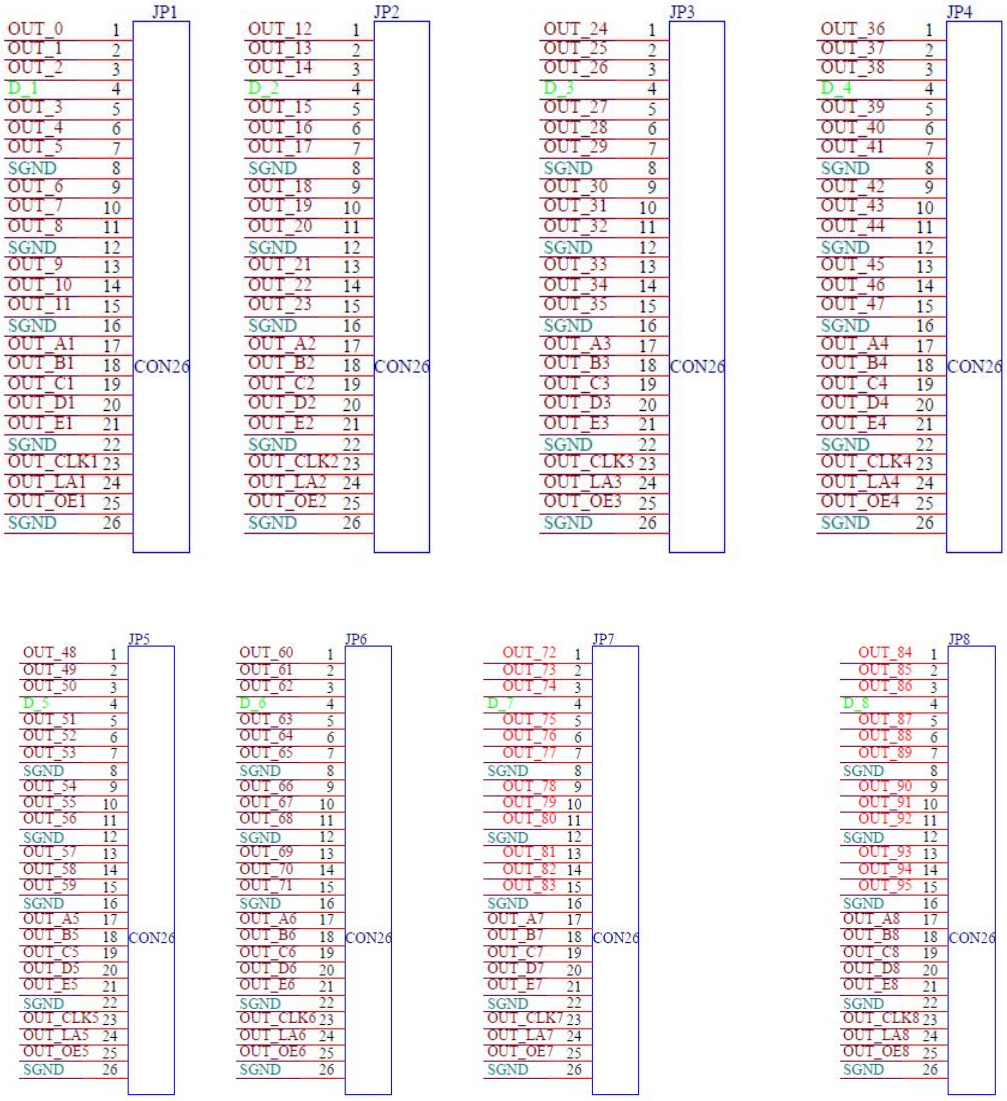
Port Definition

Port Definition of the 32 Groups of parallel connection data



外接接口

TEST_1，常态为高，当检测到低电平时，输出测试信号。

LEDR，开电正常时亮。

LEDG，当从P0口进信号时，灯闪烁得快一些；
当从P1口进信号时，灯闪烁得慢一些。

LED灯与按键外引接口定义：
1.GND，开关负极
2.外接开关正极
3.外接红色灯的负极，通电就亮。
4.+3.3V电压
5.外接绿色灯的负极

JP1-JP8 PIN Definition：

Definition	PIN#	PIN#	Definition
R	1	2	G
B	3	4	D_x(Read/Write /Storage)
R	5	6	G
B	7	8	GND
R	9	10	G
B	11	12	GND
R	13	14	G
B	15	16	GND
OUT_A1	17	18	OUT_B1
OUT_C1	19	20	OUT_D1
OUT_E1	21	22	GND
OUT_CLK1	23	24	OUT_LA1
OUT_OE1	25	26	GND

J6 PIN Definition:

PIN#	1	2	3	4
Definition	GND	SWCLK	SWDIO	+3.3V

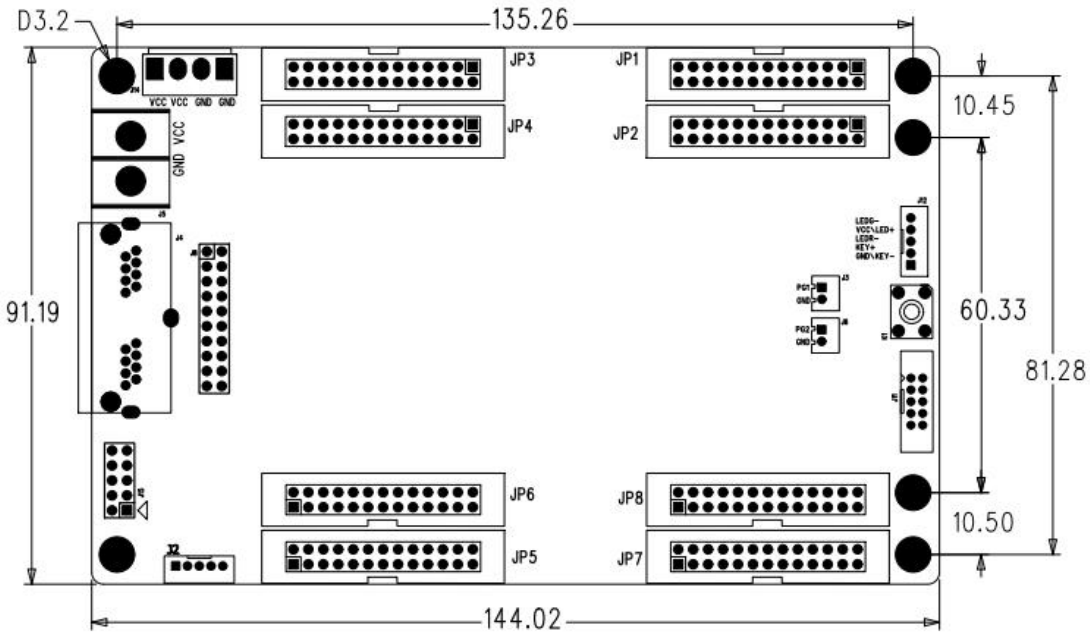
J11 PIN Definition:

Definition	VBB	GND	FLS_CS	FLS_DO	FLS_CLK
PIN#	1	2	3	4	5
PIN#	10	9	8	7	6
Definition	VBB	GND	mCONF_DONE	PROGRAM_B	FLS_DI

Indicator Illustration

Indicator	Position	Status	Illustration
Status Indicator (Green)	U6	Flickering Slowly at a constant	The receiving card is working properly, The Ethernet Cable Connection is fine, No DVI Signal Input
		Flickering Fast at a constant	The receiving card is working properly, The Ethernet Cable Connection is fine, with DVI Signal Input
		It goes out	No Gigabit Ethernet Signal
		Fast Flickering 3 Tunes	The receiving card is working properly, The Ethernet Cable Loop Connection is fine, DVI Signal Input
Status Indicator	U5	Long Lasting On	Power is On

Dimensions


D3.2
135.26
JP3
JP1
JP4
JP2
10.45
91.19
60.33
81.28
JP6
JP8
JP5
JP7
10.50
144.02

4Product Specifications

Specifications

Electric Parameters	Input Voltage	DC3.5-5.5V
	Rated Current	0.6A
	Rated Power	3W
Operating Environment	Operating Temperature	-20℃ - 70℃
	Operating Humidity	10%RH-90%RH
Storage Environment	Temperature	-25℃～125℃
Dimensions	144.02mmX91.19mm	
Net Weight	110g	
Certifications	It conforms to RoHS and CE-EMC standards.	

Precautions

1. The testing (debugging) and installation should be done by the qualified professionals
2. Anti-Static, Water-Proof and Dust-Proof Required