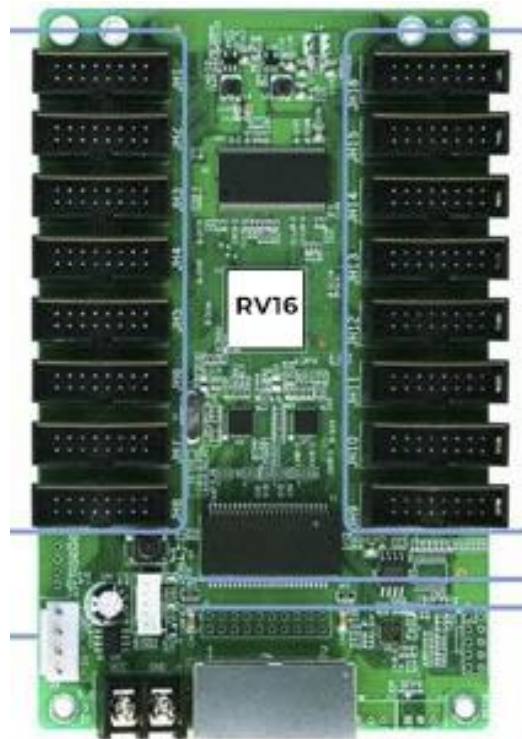


# RV16

RECEIVING CARD



SPECIFICATION

# Contents

- [1 Introduction.....](#)
- [2 Features.....](#)
- [3 Dimensions.....](#)
- [4 Hardware.....](#)
- [5 Typical Networking.....](#)
- [6 Specifications.....](#)



# 1 Introduction

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- The RV16 is a new receiving card developed by TWT. A single RV16 loads up to 512x256 pixels. The RV16 supports pixel-level brightness and chroma calibration, which effectively removes color differences, greatly improves the display consistency of LED images, and presents finer displays to users.
- Software and hardware designs of the RV16 have fully concerned users' deployment, operating and maintenance scenarios, enabling easier deployment, more stable operating and more efficient maintenance.

## **Hardware design:**

- Integrates 16 standard HUB75 connectors, which makes the HUB board unnecessary.
- Adopts the Gigabit Ethernet port, which can connect to the PC.

## **Software design:**

- Supports pixel-level brightness and chroma calibration.
- Supports setting of images pre-stored in the receiving card.
- Supports status detection of temperature, voltage, Ethernet cable communication and video source signals.
- Supports the 5-pin LCD module.

# 2 Features

- 512×256 pixels
- HUB75 connectors
- Power socket
- D1, status indicator
- D2, power indicator
- Power socket
- Gigabit Ethernet ports

## Indicators

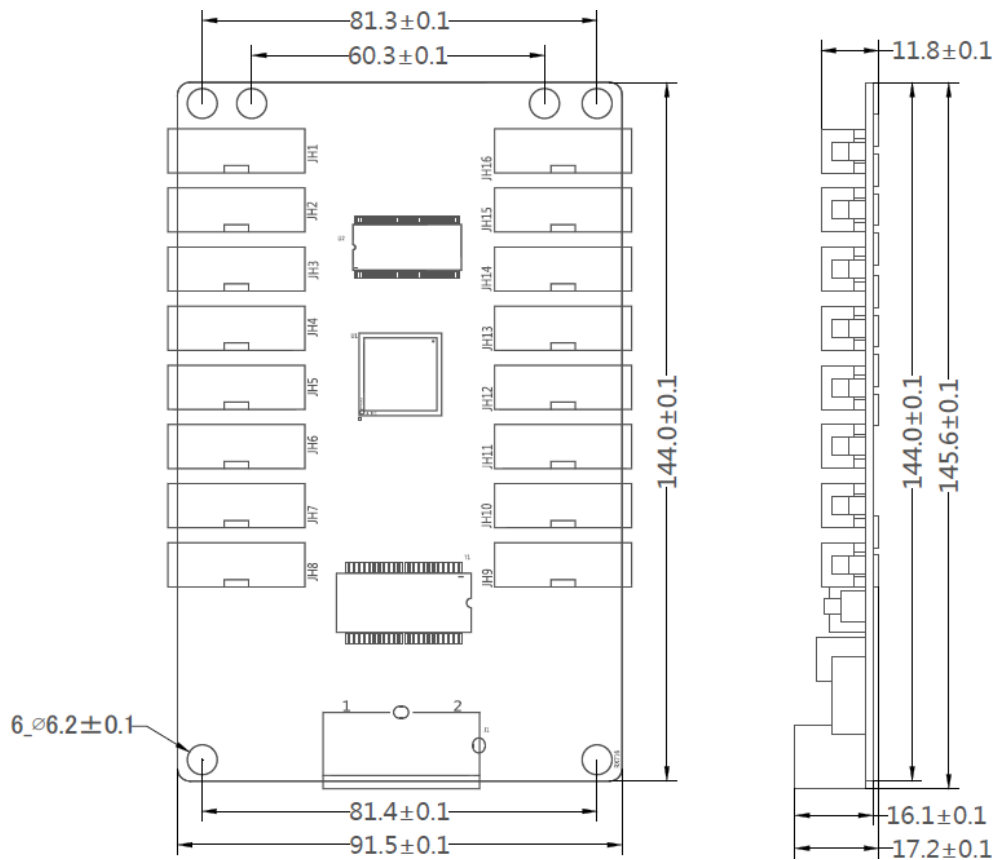
Indicator	Status	Description
Status indicator (green)	Flashes every other 1s.	No sending card mode: The receiving card works normally with no sending card connected. Ethernet cable connection is normal, and video source input is available.
	Flashes every other 0.5s.	Sending card mode: Both the receiving card and the sending card work normally. Ethernet cable connection is normal, and video source input is available.
	Flashes every other 3s.	The receiving card works normally while the Ethernet cable connection is abnormal.
	Rapidly flashes for 3 times every other 3s.	The receiving card works normally and Ethernet cable connection is normal, while no video source input is available.
	Rapidly flashes every other 0.2s.	Program loading fails in normal operating and the device is coming to the backup operating state.
Power indicator (red)	Always on	The indicator will be always on after the power is on.

Features	Description
Supporting pixel level brightness and chroma calibration	Brightness and chroma calibration on TWT for each pixel could effectively remove color differences, make the whole screen's brightness and chroma highly consistent, and improve the display effect.
Supporting setting of images pre-stored in the receiving card	On TWT, the specified images could be set as the screen startup image and images used when the Ethernet cable is disconnected or no video source signal is available.
Supporting status detection of temperature, voltage, Ethernet cable communication and video source signals	On TWT, the status of the receiving card's temperature, voltage, Ethernet cable communication and video source signals can be detected.
Supporting LCD module	Supports TWT's general 5-pin LCD module. The LCD module is connected to the HUB board to display temperature, voltage, single operating time and total operating time of the receiving card.
Supporting readback of configuration file	On TWT (V5.0.0 or later), the configuration information stored in the receiving card can be read back.
Supporting readback of firmware version	On TWT (V5.0.0 or later), the firmware versions of the receiving card can be read back.

# 3 Dimensions

The board thickness is not greater than 2.0 mm, and the total thickness (board thickness + thickness of components on the front and rear panels) is not greater than 17.5 mm.

The unit of the dimension chart is “mm”. The location holes are connected to signal grounds (GND).



# Definition of Data Interface

JH1

GND	16	16	15	15	HOE1
HLAT1	14	14	13	13	HDCLK1
HD1	12	12	11	11	HC1
HB1	10	10	9	9	HA1
HE1	8	8	7	7	B2
G2	6	6	5	5	R2
GND	4	4	3	3	B1
G1	2	2	1	1	R1

JH2

GND	16	16	15	15	HOE2
HLAT2	14	14	13	13	HDCLK2
HD1	12	12	11	11	HC1
HB1	10	10	9	9	HA1
HE1	8	8	7	7	B4
G4	6	6	5	5	R4
GND	4	4	3	3	B3
G3	2	2	1	1	R3

JH3

GND	16	16	15	15	HOE3
HLAT3	14	14	13	13	HDCLK3
HD2	12	12	11	11	HC2
HB2	10	10	9	9	HA2
HE2	8	8	7	7	B6
G6	6	6	5	5	R6
GND	4	4	3	3	B5
G5	2	2	1	1	R5

JH4

GND	16	16	15	15	HOE4
HLAT4	14	14	13	13	HDCLK4
HD2	12	12	11	11	HC2
HB2	10	10	9	9	HA2
HE2	8	8	7	7	B8
G8	6	6	5	5	R8
GND	4	4	3	3	B7
G7	2	2	1	1	R7

JH5

GND	16	16	15	15	HOE5
HLAT5	14	14	13	13	HDCLK5
HD3	12	12	11	11	HC3
HB3	10	10	9	9	HA3
HE3	8	8	7	7	B10
G10	6	6	5	5	R10
GND	4	4	3	3	B9
G9	2	2	1	1	R9

JH6

GND	16	16	15	15	HOE6
HLAT6	14	14	13	13	HDCLK6
HD3	12	12	11	11	HC3
HB3	10	10	9	9	HA3
HE3	8	8	7	7	B12
G12	6	6	5	5	R12
GND	4	4	3	3	B11
G11	2	2	1	1	R11

JH7

GND	16	16	15	15	HOE7
HLAT7	14	14	13	13	HDCLK7
HD4	12	12	11	11	HC4
HB4	10	10	9	9	HA4
HE4	8	8	7	7	B14
G14	6	6	5	5	R14
GND	4	4	3	3	B13
G13	2	2	1	1	R13

JH8

GND	16	16	15	15	HOE8
HLAT8	14	14	13	13	HDCLK8
HD4	12	12	11	11	HC4
HB4	10	10	9	9	HA4
HE4	8	8	7	7	B18
G18	6	6	5	5	R18
GND	4	4	3	3	B15
G15	2	2	1	1	R15

JH9

GND	16	16	15	15	HOE9
HLAT9	14	14	13	13	HDCLK9
HD5	12	12	11	11	HC5
HB5	10	10	9	9	HA5
HE5	8	8	7	7	B18
G18	6	6	5	5	R18
GND	4	4	3	3	B17
G17	2	2	1	1	R17

JH10

GND	16	16	15	15	HOE10
HLAT10	14	14	13	13	HDCLK10
HD5	12	12	11	11	HC5
HB5	10	10	9	9	HA5
HE5	8	8	7	7	B20
G20	6	6	5	5	R20
GND	4	4	3	3	B19
G19	2	2	1	1	R19

JH11

GND	16	16	15	15	HOE11
HLAT11	14	14	13	13	HDCLK11
HD6	12	12	11	11	HC6
HB6	10	10	9	9	HA6
HE6	8	8	7	7	B22
G22	6	6	5	5	R22
GND	4	4	3	3	B21
G21	2	2	1	1	R21

JH12

GND	16	16	15	15	HOE12
HLAT12	14	14	13	13	HDCLK12
HD6	12	12	11	11	HC6
HB6	10	10	9	9	HA6
HE6	8	8	7	7	B24
G24	6	6	5	5	R24
GND	4	4	3	3	B23
G23	2	2	1	1	R23

JH13

GND	16	16	15	15	HOE13
HLAT13	14	14	13	13	HDCLK13
HD7	12	12	11	11	HC7
HB7	10	10	9	9	HA7
HE7	8	8	7	7	B26
G26	6	6	5	5	R26
GND	4	4	3	3	B25
G25	2	2	1	1	R25

JH14

GND	16	16	15	15	HOE14
HLAT14	14	14	13	13	HDCLK14
HD7	12	12	11	11	HC7
HB7	10	10	9	9	HA7
HE7	8	8	7	7	B28
G28	6	6	5	5	R28
GND	4	4	3	3	B27
G27	2	2	1	1	R27

JH15

GND	16	16	15	15	HOE15
HLAT15	14	14	13	13	HDCLK15
HD8	12	12	11	11	HC8
HB8	10	10	9	9	HA8
HE8	8	8	7	7	B30
G30	6	6	5	5	R30
GND	4	4	3	3	B29
G29	2	2	1	1	R29

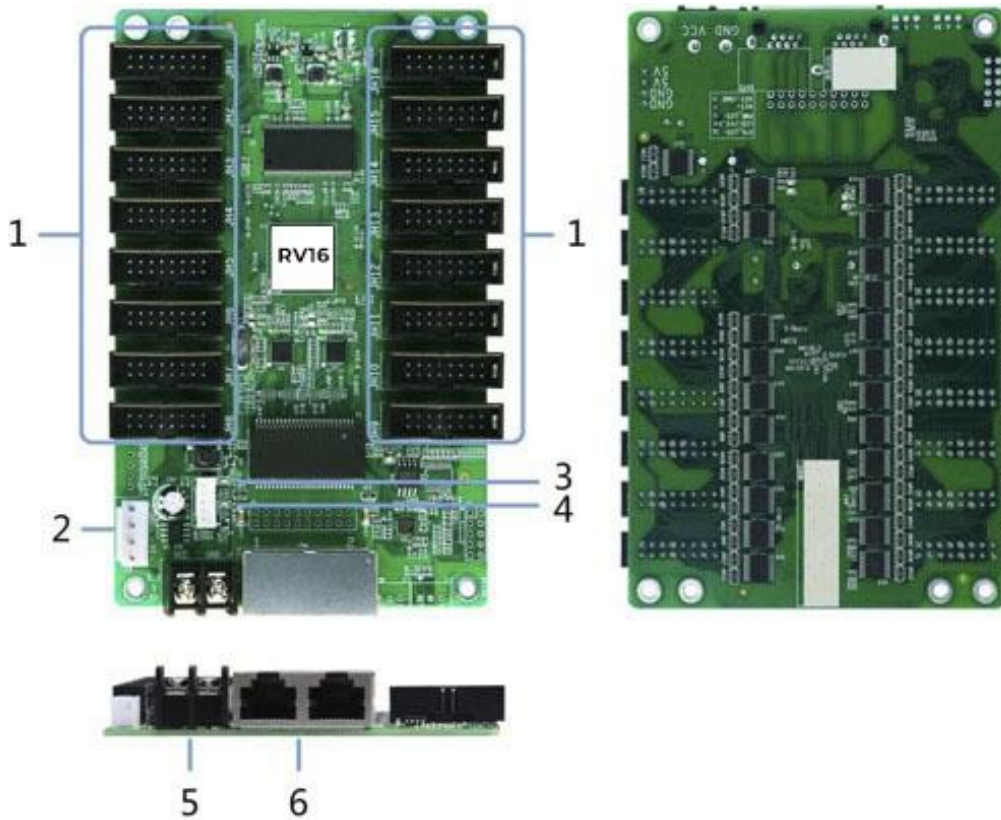
JH16

GND	16	16	15	15	HOE16
HLAT16	14	14	13	13	HDCLK16
HD8	12	12	11	11	HC8
HB8	10	10	9	9	HA8
HE8	8	8	7	7	B32
G32	6	6	5	5	R32
GND	4	4	3	3	B31
G31	2	2	1	1	R31

Definition of Data Interface			
R	1	2	G
B	3	4	GND
R	5	6	G
B	7	8	HE
HA	9	10	HB
HC	11	12	HD
HDCLK	13	14	HLAT
HOE	15	16	GND

# 4 Hardware

## Appearance

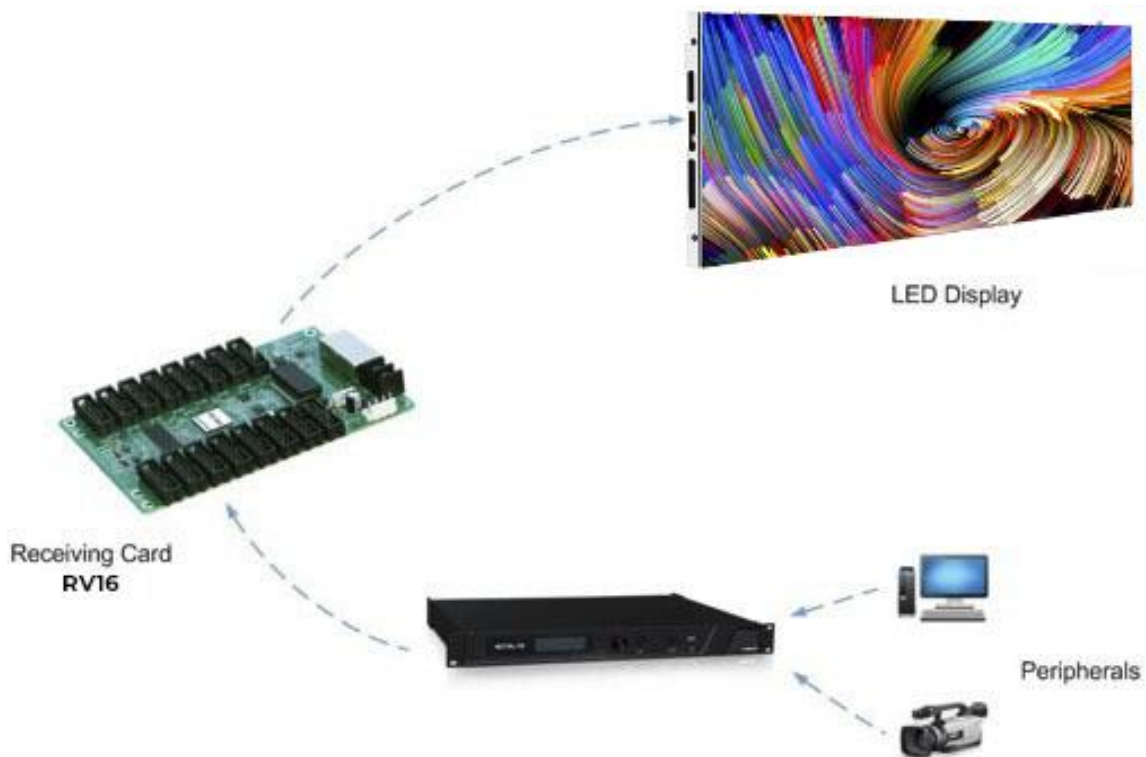


No.	Description
1	HUB75 connectors
2	Power socket
3	D1, status indicator
4	D2, power indicator
5	Power socket
6	Gigabit Ethernet ports



# 5 Typical Networking

- The RV16 is applied to the LED display synchronous system which is generally composed of the LED display, receiving card, LED display controller, and controller peripherals. The receiving card is connected to the LED display over HUB connectors.
- The synchronous system requires connecting a computer to display the computer's images and texts on the LED display. The synchronous system's structure is shown in the following figure.



# 6 Specifications

Input voltage	DC 3.3 V–5.5 V
Rated current	0.5 A
Rated power consumption	2.5 W
Operating temperature	-20°C–70°C
Storage temperature	-20°C–70°C
Operating humidity	10%RH–90%RH
Dimensions	145.6 mm x 95.5 mm x 17.2 mm
Net weight	100.1 g
Certifications	EMC Class A RoHS
Packing	An antistatic bag and anti-collision foam are prepared for each receiving card. Dimensions of the packing box: 650.0 mm x 500.0 mm x 200.0 mm, 100 receiving cards in each box.



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TWT reserves the right to make product appearance , dimensions and specifications alternations.

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