BX-i7 Receiving card

Version：V1.0   Release date：2020.06.30

Catalog

Instruction

Thank you for purchasing our LED control card.Hope you can enjoy the excellent performance of this product.The LED control card is designed to meet international and industry standards, but if not properly operated, it may cause personal injury and property damage.In order to avoid possible hazards of the equipment and to benefit from your equipment as much as possible, please follow the instructions in this manual when installing and operating the product.

About software

It is not allowed to change,decompilation, disassemble, decrypt or reverse engineer the software installed on this product. All the above acts are illegal.

Features

- It adopts high-density connector interface, dustproof and shockproof, with high stability and reliability.

- Size small , suitable for all kinds of transparent screens.

- Single card supports 32 groups of RGB signals to be output in parallel.

- Single card can support 128＊2048 pixels (related to the driving chip and scanning mode)

- Support low brightness and high gray.

- Support calibration sequence.

- Support parameter monitoring such as box temperature, humidity and power supply voltage and fan control.

- Support dual card backup and dual power supply backup.

- Support any scanning type between 1 – 1 / 64 scans, and support serial decoding scanning such as 595.

- Supports arbitrary point selection, and can easily realize creative displays such as special-shaped screen and spherical screen.

- Support BX full range of sending equipment.

GUIDING

Safety notification

- This product rated working voltage 5V, voltage range 4V～5.5V, please strictly guarantee the BX-I7 series power quality

- When you want to connect or unplug any signal cord or control card, make sure all power cords are unplugged beforehand.

- When you want to add hardware devices to the product or remove hardware devices from the product, please confirm all signal lines and electricity

- The source line has been removed beforehand.

- Before any hardware operation, please turn off the LED control card power and release the LED control card by touching the ground surface Static electricity.

- Please use the product in a clean, dry and ventilated environment. Do not use the product in a high temperature or humidity environment.

- This product is an electronic product, please keep away from fire, water and inflammable and explosive dangerous goods.

- This product contains high pressure components. Please do not open the case or repair the equipment by yourself.

- Please turn off the power switch immediately and contact the dealer if you find any abnormal situation such as smoking or peculiar smell.

FUNCTIONS

Bx-i7 receiving card is a high-end receiving card with small size and large load, which is suitable for all kinds of full-color LED display screens and supports mainstream LED screen driver chips. It adopts the hub board connected to the display screen, which is dust-proof and shockproof, with high stability and reliability..Support Gigabit network playback mode, support asynchronous player YQ series products, with BX-VS/VSM and other sending card to present the best display effect. The new high refresh technology allows you to have ultra HD picture quality experience.Product structure is simple, easy to install, Easy operation is to achieve the best results, no need training.BX-i1 receiving card hardware system can be upgraded online to maximize user benefits.

Easy installation

Unified interface standard, the unified specification of the installation hole, support the connection of the external operation indicator lamp and the test button;2nos double Gigabit network port, support arbitrary exchange of input and output, convenient installation cascade.It supports film screen, glass screen and other LED displays, with less space and easier installation

Flexible interface

It adopts high-density connector interface, supports E-signal, support maximum64 Scan, 32 channels of RGB signal parallel output or 64 channels of serial output at most. Support any interface display data group exchange, RGB color sequence exchange, convenient for customers to flexibly adjust module layout.

More folio modes

Support 2 folio, 3 folio, 4 folio, folio width can be different.For example, 2 folio: 128 pixels in front, 64 pixels behind;Folio: 128 pixels in front, 128 pixels in the middle and 64 pixels behind.

Variable data trends

Normal data flow from right to left by default.Data flow direction can be set as left to right, top to bottom and bottom to top according to the actual use of the customer site.Specific use, and LED module alignment direction corresponding.Right-to-left and top-down modes are recommended.

Support irregular screen

Support display data line offset, can be flexibly adjusted within the range of 0 to 511 points, depending on the specific load width, the maximum can be set 384 line height display offset or data path as the unit of offset, convenient configuration for irregular screen.

More scan mode

Match with LedshowTV software, support 64 scan, 32 scan, 16 scan, 8 scan, 4 scan and other kinds of straight and folding scanning fast configuration;Support no 138 line decoding, 595 line decoding, RT5958 line decoding and so on.Through intelligent scan function, support static screen, any scan mode from 2 scan to 32 scan.

Compatible with more chips

Support conventional 16 bit serial shift constant current driver chip, PWM chip, such as: common sun and moon, accumulation, micro, set up the north and other manufacturers of driver chip.

Superior display effect

Adopt new high brush technology, support high refresh high grayscale display effect, Can support 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536 grayscale display. Flexible

display mode selection, suitable for outdoor, indoor various applications.work with LedshowTV software, through adjusting the display refresh rate, display mode and display ratio and other parameters, further improve the display quality, to meet customer shooting effect.

Adjust clock

Support shift clock from 10.42MHz to 31.25MHz self-regulation, adjustable duty cycle, clock phase, etc.It can satisfy the cascading characteristics of different modules, eliminate the rising points generated when some modules are cascading, and increase the loading width as much as possible on the premise of guaranteeing the refresh rate.

Blanking adjustment

By adjusting the line blanking time, line breaking time, level 1 graying and other features, further eliminate the effect of LED screen's virtual brightness, and perfectly display the text content.

Easy maintenance

The receiving card supports configuration parameter read-back function, single point parameter setting and query read-back, and supports online upgrade, which is convenient for customer system upgrade and maintenance.

TECHNICAL PARAMETERS

SCREEN INDEX	
Parameters	Specification
Minimum size	32 x 32
Control size	128*2048
Number of data groups	32 parallel /64 serial
Row offset range	0-511 point offset range
Row offset height	Max 384, setup the row height or data unit
Cascade quantity	Single network line level connection card receiving quantity ≤ 1024
Gray level	≤65536 degree
Refresh rate	Support 5000Hz, will be changed with the control width.
Application	All kinds of full color LED screens
Chips	All kinds of main stream full color LED chips
Interface	2 nos of high density connector interfaces, 8 nos of RGB data

Details	
Input power supply	4V ~ 5.5V ; Please make sure the quality of power supply
Power Dissipation	≤5W
Temperature	-40℃ ~ 80℃
Size	70mm⬜ 45mm

INTERFACE DIAGRAM
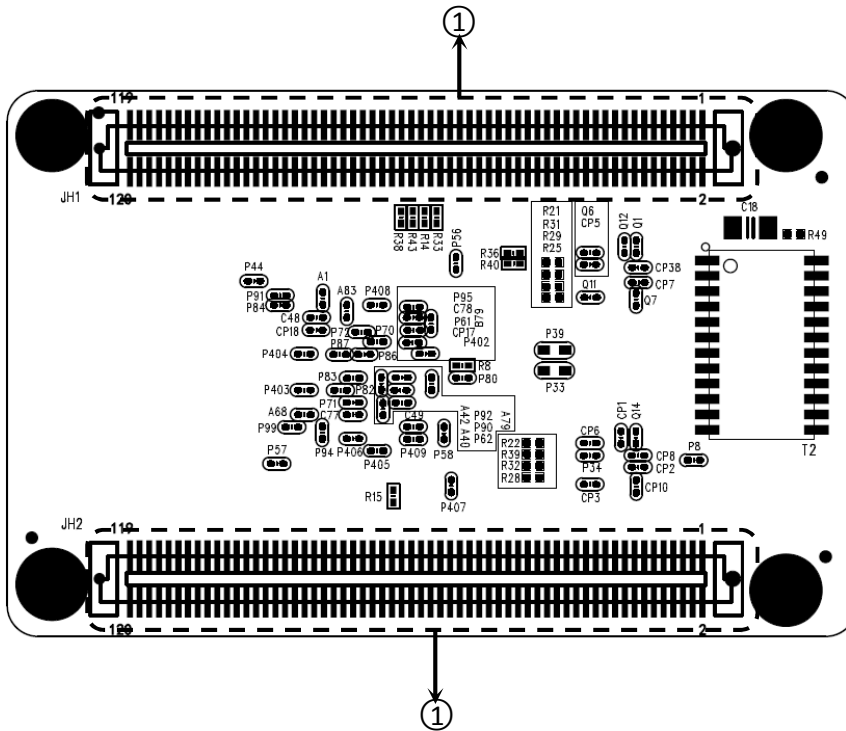
Interface		
1	Output interface	high density connector（JH1、JH2）

Interface definition

32 Groups Parallel Data definition as following

JH1

Pin	Signal	Signal	Pin
1	GND	GND	2
3	EXT_LCD_CS	NC	4
5	EXT_LCD_RS	NC	6
7	EXT_LCD_SCL	NC	8
9	EXT_LCD_SDA	NC	10
11	EXT_LCD_BL0	NC	12
13	EXT_LCD_BL1	NC	14
15	EXT_KEY	NC	16
17	RFU1	NC	18
19	RFU2	NC	20
21	GND	NC	22
23	NC	NC	24
25	GND	GND	26
27	27	28	28
29	29	30	30
31	31	32	32
33	33	34	34
35	35	36	36
37	37	38	38
39	GND	GND	40
41	41	42	42
43	43	44	44
45	45	46	46
47	47	48	48
49	49	50	50
51	51	52	52
53	GND	GND	54
55	55	56	56
57	57	58	58
59	59	60	60
61	61	62	62
63	63	64	64
65	65	66	66
67	GND	GND	68
69	69	70	70
71	71	72	72
73	73	74	74
75	75	76	76
77	77	78	78
79	79	80	80
81	GND	GND	82
83	RFU4	RFU3	84
85	RFU6	RFU5	86
87	RFU8	RFU7	88
89	RFU10	RFU9	90
91	RFU12	RFU11	92
93	RFU14	RFU13	94
95	GND	GND	96
97	RFU16	RFU15	98
99	RFU18	RFU17	100
101	NC	NC	102
103	NC	NC	104
105	NC	NC	106
107	NC	NC	108
109	GND	GND	110
111	GND	GND	112
113	NC	NC	114
115	VCC5_0	VCC5_0	116
117	VCC5_0	VCC5_0	118
119	VCC5_0	VCC5_0	120

JH2

Pin	Signal	Signal	Pin
1	ETH_SHEILD	ETH_SHEILD	2
3	ETH_SHEILD	ETH_SHEILD	4
5	NC	NC	6
7	NC	NC	8
9	PORT1_T0+	PORT2_T0+	10
11	PORT1_T0-	PORT2_T0-	12
13	NC	NC	14
15	PORT1_T1+	PORT2_T1+	16
17	PORT1_T1-	PORT2_T1-	18
19	NC	NC	20
21	PORT1_T2+	PORT2_T2+	22
23	PORT1_T2-	PORT2_T2-	24
25	NC	NC	26
27	PORT1_T3+	PORT2_T3+	28
29	PORT1_T3-	PORT2_T3-	30
31	NC	NC	32
33	NC	NC	34
35	TEST_INPUT_KEY	STA_LED	36
37	GND	GND	38
39	A	DCLK	40
41	B	DCLK_2	42
43	C	LAT	44
45	D	CTRL	46
47	E	OE_RED	48
49	OE_BLUE	OE_GREEN	50
51	GND	GND	52
53	53	54	54
55	55	56	56
57	57	58	58
59	59	60	60
61	61	62	62
63	63	64	64
65	GND	GND	66
67	67	68	68
69	69	70	70
71	71	72	72
73	73	74	74
75	75	76	76
77	77	78	78
79	GND	GND	80
81	81	82	82
83	83	84	84
85	85	86	86
87	87	88	88
89	89	90	90
91	91	92	92
93	GND	GND	94
95	95	96	96
97	97	98	98
99	99	100	100
101	101	102	102
103	103	104	104
105	105	106	106
107	GND	GND	108
109	NC	NC	110
111	NC	NC	112
113	NC	NC	114
115	NC	NC	116
117	GND	GND	118
119	GND	GND	120

JH1							
		GND	1	2	GND		
LCD	CS signal of LCD	EXT_LCD_CS	3	4	NC		
	RS signal of LCD	EXT_LCD_RS	5	6	NC		
	Clock signal of LCD	EXT_LCD_SCL	7	8	NC		
	LCD data signal	EXT_LCD_SDA	9	10	NC		
	Backlight signal 1 of LCD	EXT_LCD_BL0	11	12	NC		
	Backlight signal 2 of LCD	EXT_LCD_BL1	13	14	NC		
	LCD control key	EXT_KEY	15	16	NC		

JH1							
	/	RFU1	17	18	NC		
	/	RFU2	19	20	NC		
		GND	21	22	NC		
		NC	23	24	NC		
		GND	25	26	GND		
	/	GPIO_GD16	27	28	GPIO_RD16	/	
	/	GPIO_RD17	29	30	GPIO_BD16	/	
	/	GPIO_BD17	31	32	GPIO_GD17	/	
	/	GPIO_GD18	33	34	GPIO_RD18	/	
	/	GPIO_RD19	35	36	GPIO_BD18	/	
	/	GPIO_BD19	37	38	GPIO_GD19	/	
		GND	39	40	GND		
	/	GPIO_GD20	41	42	GPIO_RD20	/	
	/	GPIO_RD21	43	44	GPIO_BD20	/	
	/	GPIO_BD21	45	46	GPIO_GD21	/	
	/	GPIO_GD22	47	48	GPIO_RD22	/	
	/	GPIO_RD23	49	50	GPIO_BD22	/	
	/	GPIO_BD23	51	52	GPIO_GD23	/	
		GND	53	54	GND		
	/	GPIO_GD24	55	56	GPIO_RD24	/	
	/	GPIO_RD25	57	58	GPIO_BD24	/	
	/	GPIO_BD25	59	60	GPIO_GD25	/	
	/	GPIO_GD26	61	62	GPIO_RD26	/	
	/	GPIO_RD27	63	64	GPIO_BD26	/	
	/	GPIO_BD27	65	66	GPIO_GD27	/	

		GND	67	68	GND		
	/	GPIO_GD28	69	70	GPIO_RD28	/	
	/	GPIO_RD29	71	72	GPIO_BD28	/	
	/	GPIO_BD29	73	74	GPIO_GD29	/	
	/	GPIO_GD30	75	76	GPIO_RD30	/	
	/	GPIO_RD31	77	78	GPIO_BD30	/	
	/	GPIO_BD31	79	80	GPIO_GD31	/	
		GND	81	82	GND		
	/	RFU4	83	84	RFU3	/	
	/	RFU6	85	86	RFU5	/	
	/	RFU8	87	88	RFU7	/	
	/	RFU10	89	90	RFU9	/	
	/	RFU12	91	92	RFU11	/	
	/	RFU14	93	94	RFU13	/	
		GND	95	96	GND		
	/	RFU16	97	98	RFU15	/	
	/	RFU18	99	100	RFU17	/	
		NC	101	102	NC		
		NC	103	104	NC		
		NC	105	106	NC		
		NC	107	108	NC		
		GND	109	110	GND		
		GND	111	112	GND		
		NC	113	114	NC		
note1		VCC	115	116	VCC		note1
		VCC	117	118	VCC		
		VCC	119	120	VCC		

JH2							
	Shield Ground	ETH_SHEILD	1	2	ETH_SHEILD	Shield Ground	
	Shield Ground	ETH_SHEILD	3	4	ETH_SHEILD	Shield Ground	

JH2							
		NC	5	6	NC		
		NC	7	8	NC		
Gigabit network port	/	PORT1_T0+	9	10	PORT2_T0+	/	Gigabit network port
	/	PORT1_T0-	11	12	PORT2_T0-	/	
		NC	13	14	NC		
	/	PORT1_T1+	15	16	PORT2_T1+	/	
	/	PORT1_T1-	17	18	PORT2_T1-	/	

		NC	19	20	NC		
	/	PORT1_T2+	21	22	PORT2_T2+	/	
	/	PORT1_T2-	23	24	PORT2_T2-	/	
		NC	25	26	NC		
	/	PORT1_T3+	27	28	PORT2_T3+	/	
	/	PORT1_T3-	29	30	PORT2_T3-	/	
		NC	31	32	NC		
		NC	33	34	NC		
note3	Test button	TEST_INPUT_KEY	35	36	STA_LED-	Operation indicator	note2
		GND	37	38	GND		
	Row decoded signal	GPIO_A	39	40	DCLK	First shift clock output	
		GPIO_B	41	42	DCLK_2	Second shift clock output	
		GPIO_C	43	44	LAT	Latch signal output	
		GPIO_D	45	46	CTRL	Afterglow control signal	
		GPIO_E	47	48	OE_RED	Display enable	
	Display enable	OE_BLUE	49	50	OE_GREEN	Display enable	
		GND	51	52	GND		
	/	GPIO_GD0	53	54	GPIO_RD0	/	
	/	GPIO_RD1	55	56	GPIO_BD0	/	
	/	GPIO_BD1	57	58	GPIO_GD1	/	
	/	GPIO_GD2	59	60	GPIO_RD2	/	
	/	GPIO_RD3	61	62	GPIO_BD2	/	
	/	GPIO_BD3	63	64	GPIO_GB3	/	
		GND	65	66	GND		
	/	GPIO_GD4	67	68	GPIO_RD4	/	
	/	GPIO_RD5	69	70	GPIO_BD4	/	
	/	GPIO_BD5	71	72	GPIO_GD5	/	
	/	GPIO_GD6	73	74	GPIO_RD6	/	
	/	GPIO_RD7	75	76	GPIO_BD6	/	
	/	GPIO_BD7	77	78	GPIO_GD7	/	
		GND	79	80	GND		
	/	GPIO_GD8	81	82	GPIO_RD8	/	
	/	GPIO_RD9	83	84	GPIO_BD8	/	
	/	GPIO_BD9	85	86	GPIO_GD9	/	
	/	GPIO_GD10	87	88	GPIO_RD10	/	
	/	GPIO_RD11	89	90	GPIO_BD10	/	
	/	GPIO_BD11	91	92	GPIO_GD11	/	
		GND	93	94	GND		
	/	GPIO_GD12	95	96	GPIO_RD12	/	
	/	GPIO_RD13	97	98	GPIO_BD12	/	

	/	GPIO_BD13	99	100	GPIO_GD13	/	
	/	GPIO_GD14	101	102	GPIO_RD14	/	
	/	GPIO_RD15	103	104	GPIO_BD14	/	
	/	GPIO_BD15	105	106	GPIO_GD15	/	
		GND	107	108	GND		
		NC	109	110	NC		
		NC	111	112	NC		
		NC	113	114	NC		
		NC	115	116	NC		
		GND	117	118	GND		
		GND	119	120	GND		

64 serial data interfaces

JH1							
		GND	1	2	GND		
	CS signal of LCD	EXT_LCD_CS	3	4	NC		
	RS signal of LCD	EXT_LCD_RS	5	6	NC		
	Clock signal of LCD	EXT_LCD_SCL	7	8	NC		
LCD	LCD data signal	EXT_LCD_SDA	9	10	NC		
	Backlight signal 1 of LCD	EXT_LCD_BL0	11	12	NC		
	Backlight signal 2 of LCD	EXT_LCD_BL1	13	14	NC		
	LCD control key	EXT_KEY	15	16	NC		
	/	RFU1	17	18	NC		
	/	RFU2	19	20	NC		
		GND	21	22	NC		

JH1							
		NC	23	24	NC		
		GND	25	26	GND		
	/	Data50	27	28	Data49	/	
	/	Data52	29	30	Data51	/	
	/	Data54	31	32	Data53	/	
	/	Data56	33	34	Data55	/	
	/	Data58	35	36	Data57	/	
	/	Data60	37	38	Data59	/	
		GND	39	40	GND		
	/	Data62	41	42	Data61	/	
	/	Data64	43	44	Data63	/	
		NC	45	46	NC		
		NC	47	48	NC		
		NC	49	50	NC		
		NC	51	52	NC		

		GND	53	54	GND		
		NC	55	56	NC		
		NC	57	58	NC		第15页
		NC	59	60	NC		
		NC	61	62	NC		
		NC	63	64	NC		
		NC	65	66	NC		
		GND	67	68	GND		
		NC	69	70	NC		
		NC	71	72	NC		
		NC	73	74	NC		
		NC	75	76	NC		
		NC	77	78	NC		
		NC	79	80	NC		
		GND	81	82	GND		
	/	RFU4	83	84	RFU3	/	
	/	RFU6	85	86	RFU5	/	
	/	RFU8	87	88	RFU7	/	
	/	RFU10	89	90	RFU9	/	
	/	RFU12	91	92	RFU11	/	
	/	RFU14	93	94	RFU13	/	
		GND	95	96	GND		
	/	RFU16	97	98	RFU15	/	
	/	RFU18	99	100	RFU17	/	
		NC	101	102	NC		
		NC	103	104	NC		
		NC	105	106	NC		
		NC	107	108	NC		
		GND	109	110	GND		
		GND	111	112	GND		
		NC	113	114	NC		
		VCC	115	116	VCC		
note1		VCC	117	118	VCC		note1
		VCC	119	120	VCC		

JH2							
Gigabit port	Shield	ETH_SHEILD	1	2	ETH_SHEILD	Shield	Gigabit port
	Shield	ETH_SHEILD	3	4	ETH_SHEILD	Shield	
		NC	5	6	NC		
		NC	7	8	NC		
	/	PORT1_T0+	9	10	PORT2_T0+	/	

JH2							
	/	Port1_T0-	11	12	Port2_T0-	/	
		NC	13	14	NC		
	/	Port1_T1+	15	16	Port2_T1+	/	
	/	Port1_T1-	17	18	Port2_T1-	/	
		NC	19	20	NC		
	/	Port1_T2+	21	22	Port2_T2+	/	
	/	Port1_T2-	23	24	Port2_T2-	/	
		NC	25	26	NC		
	/	Port1_T3+	27	28	Port2_T3+	/	
	/	Port1_T3-	29	30	Port2_T3-	/	
		NC	31	32	NC		
		NC	33	34	NC		
note3	Test button	TEST_INPUT_KEY	35	36	STA_LED-	运行指示灯	note2
		GND	37	38	GND		
	Row decoded signal	A	39	40	DCLK	First shift clock output	
		B	41	42	DCLK_2	Second shift clock output	
		C	43	44	LAT	Latch signal output	
		D	45	46	CTRL	Afterglow control signal	
		E	47	48	OE_RED	Display enable	
	Display	OE_BLUE	49	50	OE_GREEN		

		enable					
		GND	51	52	GND		
	/	Data2	53	54	Data1	/	
	/	Data4	55	56	Data3	/	
	/	Data6	57	58	Data5	/	
	/	Data8	59	60	Data7	/	
	/	Data10	61	62	Data9	/	
	/	Data12	63	64	Data11	/	
		GND	65	66	GND		
	/	Data14	67	68	Data13	/	
	/	Data16	69	70	Data15	/	
	/	Data18	71	72	Data17	/	
	/	Data20	73	74	Data19	/	
	/	Data22	75	76	Data21	/	
	/	Data24	77	78	Data23	/	
		GND	79	80	GND		
	/	Data26	81	82	Data25	/	
	/	Data28	83	84	Data27	/	
	/	Data30	85	86	Data29	/	
	/	Data32	87	88	Data31	/	
	/	Data34	89	90	Data33	/	
	/	Data36	91	92	Data35	/	
		GND	93	94	GND		
	/	Data38	95	96	Data37	/	
	/	Data40	97	98	Data39	/	
	/	Data42	99	100	Data41	/	
	/	Data44	101	102	Data43	/	
	/	Data46	103	104	Data45	/	
	/	Data48	105	106	Data47	/	
		GND	107	108	GND		
		NC	109	110	NC		
		NC	111	112	NC		
		NC	113	114	NC		
		NC	115	116	NC		
		GND	117	118	GND		
		GND	119	120	GND		

note1：The input power VCC is recommended to 4V ~ 5.5V.

note2：The operation indicator is active at low level.

note3：The test button is active at low level.

Dimension diagram
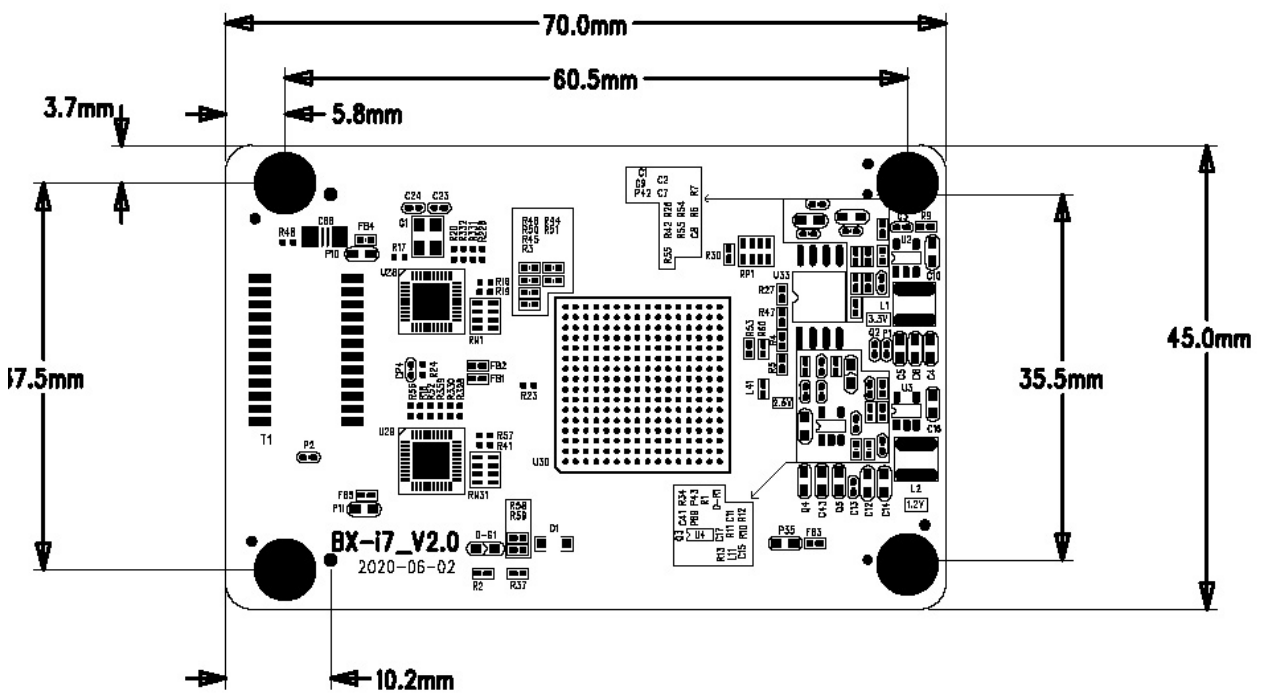
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