# Mini902M

**V1.0**

Jan 2018

## 1. Features

Mini902M is a high-end and full-featured ultra-small size mini-receiver card. Compared with traditional receiver card, Mini902M uses high-density BTB connector. It is more flexible and it adapts to a variety of electronic circuit structure, achieving a card suitable for all applications, which will considerably reduce the types of purchasing receiver card.

The system, specific circuits and program design of Mini902M, can effectively reduce the electromagnetic radiation and effectively help products easily pass through the EMC test. Specific features are as follows:

1. It has all functions of 8th and 9th generation receiver cards and it is completely compatible with them;
2. Single card can support 24- group RGB parallel data output mode;
3. Supports 64-group serial data output mode;

4. Realize high refresh and high gray level effect;
5. Supports general driver IC and PWM IC;
6. Supports any type of scan within 32 scan, and supports 595 and other serial decoding scan;
7. Supports brightness and color pixel-by-pixel calibration;
8. Maximum supports 512X512 pixels;
9. Supports 12-bit HDMI colors input (required the 9th generation sending card);
10. Use 18-bit signal processor, maximum supporting 18-bit (260,000) gray (each of red, green and blue);
11. Supports single-card color space conversion;
12. Supports configuration file read back;
13. Supports network cable BER test;
14. Supports hot backup with dual receiver cards, dual power supplier, etc;
15. RoHS compliant;
16. CE-EMC compliant.

# 2. Appearance

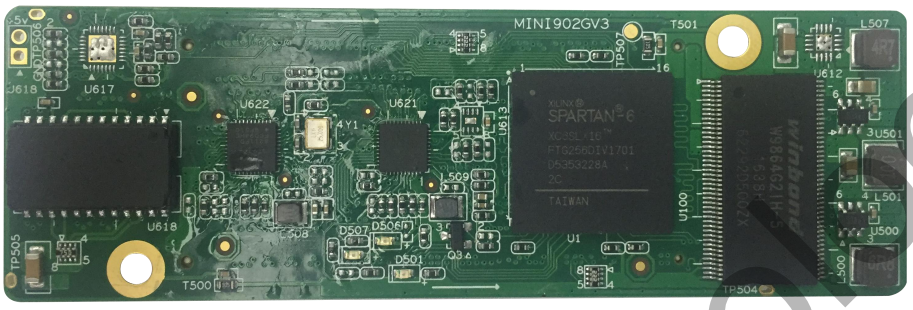
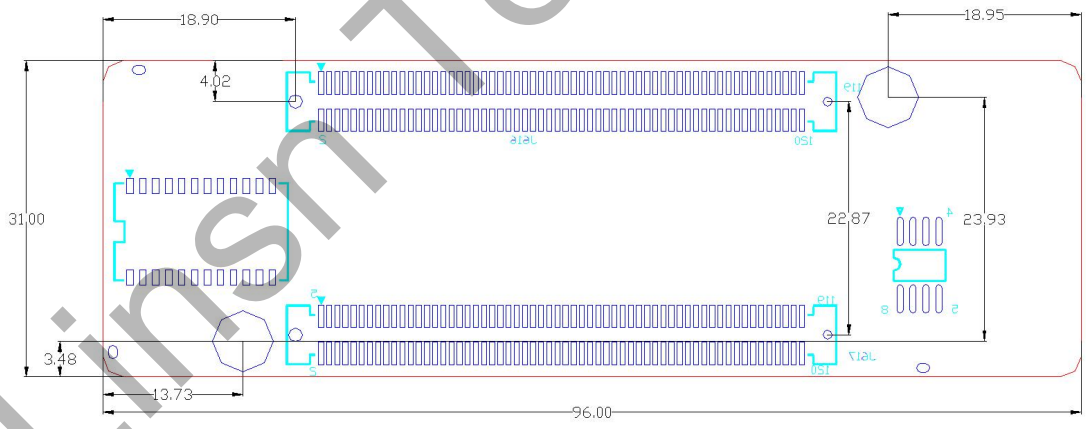



Fig 1 Mini902M Picture

# 3. Dimensions




（Viewing from top to bottom）

Fig2 Mini902M Hole dimension drawings（Unit: mm）



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# 4. Pinout

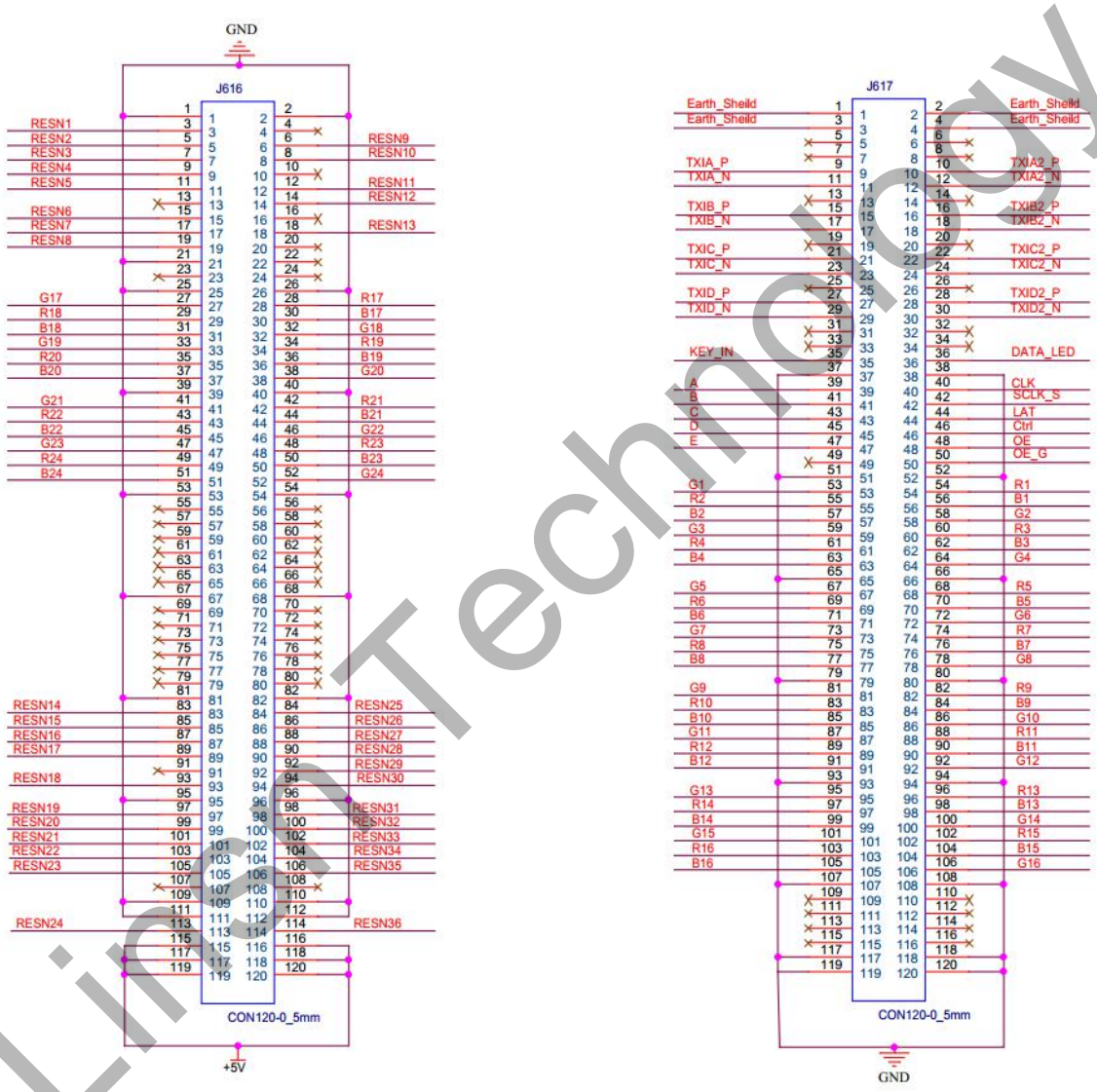


Fig.3 high-density BTB connector

# Difinition of the 24-group parallel data output mode

## Pinout for Connector1（J616）

| | | | | | |
|---|---|---|---|---|---|
| | GND | 1 | 2 | GND | |
| | NC | 3 | 4 | NC | |
| | NC | 5 | 6 | NC | |
| | NC | 7 | 8 | NC | |
| | NC | 9 | 10 | NC | |
| | NC | 11 | 12 | NC | |
| | NC | 13 | 14 | NC | |
| | NC | 15 | 16 | NC | |
| | NC | 17 | 18 | NC | |
| | NC | 19 | 20 | NC | |
| | GND | 21 | 22 | NC | |
| | NC | 23 | 24 | NC | |
| | GND | 25 | 26 | GND | |
| | G17 | 27 | 28 | R17 | |
| | R18 | 29 | 30 | B17 | |
| | B18 | 31 | 32 | G18 | |
| | G19 | 33 | 34 | R19 | |
| | R20 | 35 | 36 | B19 | |
| | B20 | 37 | 38 | G20 | |
| | GND | 39 | 40 | GND | |
| | G21 | 41 | 42 | R21 | |
| | R22 | 43 | 44 | B21 | |
| | B22 | 45 | 46 | G22 | |
| | G23 | 47 | 48 | R23 | |
| | R24 | 49 | 50 | B23 | |
| | B24 | 51 | 52 | G24 | |
| | GND | 53 | 54 | GND | |
| | NC | 55 | 56 | NC | |
| | NC | 57 | 58 | NC | |
| | 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 | |
| | NC | 83 | 84 | NC | |
| | NC | 85 | 86 | NC | |
| | NC | 87 | 88 | NC | |
| | NC | 89 | 90 | NC | |
| | NC | 91 | 92 | NC | |
| | NC | 93 | 94 | NC | |
| | GND | 95 | 96 | GND | |
| | NC | 97 | 98 | NC | |
| | NC | 99 | 100 | NC | |
| | 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 | |
| | VCC | 117 | 118 | VCC | |
| | VCC | 119 | 120 | VCC | |

# Pinout for Connector2（J617）

| | | | | | |
|---|---|---|---|---|---|
| | Eth_Sheild | 1 | 2 | Eth_Sheild | |
| | Eth_Sheild | 3 | 4 | Eth_Sheild | |

| | | | | | |
|---|---|---|---|---|---|
| | NC | 5 | 6 | NC | |
| | NC | 7 | 8 | NC | |
| Gigabit Network port | TXIA_P | 9 | 10 | TXIA2_P | Gigabit Network port |
| | TXIA_N | 11 | 12 | TXIA2_N | |
| | NC | 13 | 14 | NC | |
| | TXIB_P | 15 | 16 | TXIB2_P | |
| | TXIB_N | 17 | 18 | TXIB2_N | |
| | NC | 19 | 20 | NC | |
| | TXIC_P | 21 | 22 | TXIC2_P | |
| | TXIC_N | 23 | 24 | TXIC2_N | |
| | NC | 25 | 26 | NC | |
| | TXID_P | 27 | 28 | TXID2_P | |
| | TXID_N | 29 | 30 | TXID2_N | |
| | NC | 31 | 32 | NC | |
| | NC | 33 | 34 | NC | |
| | KEY_IN | 35 | 36 | DATA_LED- | |
| | GND | 37 | 38 | GND | |
| | A | 39 | 40 | CLK | |
| | B | 41 | 42 | SCLK_S | |
| | C | 43 | 44 | LAT | |
| | D | 45 | 46 | SR | |
| | E | 47 | 48 | OE | |
| | NC | 49 | 50 | NC | |
| | GND | 51 | 52 | GND | |
| | G1 | 53 | 54 | R1 | |
| | R2 | 55 | 56 | B1 | |
| | B2 | 57 | 58 | G2 | |
| | G3 | 59 | 60 | R3 | |
| | R4 | 61 | 62 | B3 | |
| | B4 | 63 | 64 | G4 | |
| | GND | 65 | 66 | GND | |
| | G5 | 67 | 68 | R5 | |
| | R6 | 69 | 70 | B5 | |
| | B6 | 71 | 72 | G6 | |
| | G7 | 73 | 74 | R7 | |

| | | | | | |
|---|---|---|---|---|---|
| | R8 | 75 | 76 | B7 | |
| | B8 | 77 | 78 | G8 | |
| | GND | 79 | 80 | GND | |
| | G9 | 81 | 82 | R9 | |
| | R10 | 83 | 84 | B9 | |
| | B10 | 85 | 86 | G10 | |
| | G11 | 87 | 88 | R11 | |
| | R12 | 89 | 90 | B11 | |
| | B12 | 91 | 92 | G12 | |
| | GND | 93 | 94 | GND | |
| | G13 | 95 | 96 | R13 | |
| | R14 | 97 | 98 | B13 | |
| | B14 | 99 | 100 | G14 | |
| | G15 | 101 | 102 | R15 | |
| | R16 | 103 | 104 | B15 | |
| | B16 | 105 | 106 | G16 | |
| | 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 | |

# Definition of the 64-group serial data output mode

## Pinout for connector1（J616）

| | | | | | |
|---|---|---|---|---|---|
| | GND | 1 | 2 | GND | |
| | NC | 3 | 4 | NC | |
| | NC | 5 | 6 | NC | |
| | NC | 7 | 8 | NC | |
| | NC | 9 | 10 | NC | |
| | NC | 11 | 12 | NC | |
| | NC | 13 | 14 | NC | |
| | NC | 15 | 16 | NC | |
| | NC | 17 | 18 | NC | |
| | NC | 19 | 20 | NC | |
| | GND | 21 | 22 | NC | |
| | SDIN | 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 | |
| | 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 | |
| | NC | 83 | 84 | NC | |
| | NC | 85 | 86 | NC | |
| | NC | 87 | 88 | NC | |
| | NC | 89 | 90 | NC | |
| | NC | 91 | 92 | NC | |
| | NC | 93 | 94 | NC | |
| | NC | 95 | 96 | NC | |
| | NC | 97 | 98 | NC | |
| | NC | 99 | 100 | NC | |
| | 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 | |
| | VCC | 117 | 118 | VCC | |
| | VCC | 119 | 120 | VCC | |

## Pinout for connector2（J617）

| | | | | | |
|---|---|---|---|---|---|
| | NC | 1 | 2 | NC | |
| | NC | 3 | 4 | NC | |
| | NC | 5 | 6 | NC | |
| | NC | 7 | 8 | NC | |
| Gigabit Network port | TXIA_P | 9 | 10 | TXIA2_P | Gigabit Network port |
| | TXIA_N | 11 | 12 | TXIA2_N | |
| | NC | 13 | 14 | NC | |
| | TXIB_P | 15 | 16 | TXIB2_P | |
| | TXIB_N | 17 | 18 | TXIB2_N | |
| | NC | 19 | 20 | NC | |
| | TXIC_P | 21 | 22 | TXIC2_P | |
| | TXIC_N | 23 | 24 | TXIC2_N | |
| | NC | 25 | 26 | NC | |
| | TXID_P | 27 | 28 | TXID2_P | |
| | TXID_N | 29 | 30 | TXID2_N | |
| | NC | 31 | 32 | NC | |
| | NC | 33 | 34 | NC | |
| | KEY_IN | 35 | 36 | DATA_LED- | |
| | GND | 37 | 38 | GND | |
| | A | 39 | 40 | CLK | |
| | B | 41 | 42 | SCLK_S | |
| | C | 43 | 44 | LAT | |
| | D | 45 | 46 | SR | |
| | E | 47 | 48 | OE | |
| | NC | 49 | 50 | NC | |
| | 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 | |

# 5. Working Conditions

| | Normal | Minimum value | Maximum value | Unit |
|---|---|---|---|---|
| Rated Power | 4 | 3.3 | 4.8 | W |
| Rated voltage | 5 | 4.5 | 5.5 | V |
| Rated current | 0.8 | 0.73 | 0.87 | A |
| Working temperature | | -20 | 70 | ℃ |
| Working humidity | | 0 | 95 | % |

**END**