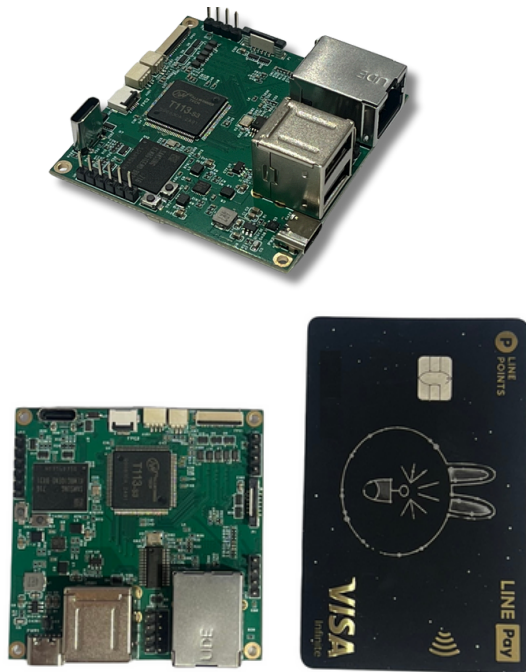


Credit Card-Size Efficiency

INDUSTRIAL-GRADE PERFORMANCE



Features

- Ultra-Compact size with Mobile-ITX , 60x60mm size for space-saving applications
- Powered by Dual-core ARM Cortex-A7 with 128MB DDR3
- 32GB eMMC storage on board design
- Single-core HiFi4 DSP for high-efficiency processing
- H.265/H.264 decoding with GPU acceleration for smooth 1080p video
- Multimedia Interfaces: MIPI-DSI (1920x1200), I2C touch, 1x headphone/Line-out and 1x MIC-in for rich audio and display integration
- Flexible Expansion: 4x USB 2.0 HS, USB Type-C for debugging, and 3x UART with flow control, offering broad connectivity options for various peripherals
- Linux OS with LVGL, Qt, GTK+ support for fast GUI development



Introduction

MBM-T113 is powered by Allwinner T113-S3 processor. delivers exceptional versatility with dual-core ARM Cortex-A7, HiFi4 DSP, and 32GB eMMC storage. Its MIPI-DSI, I2C touch interface, and GPIO make it ideal for automotive dashboards and industrial control panels. USB and UARTs support seamless connectivity for IoT devices and medical equipment. With Line-out and MIC-in, it enables audio-driven smart gateways and multimedia systems. Optimized for Linux OS with GUI libraries like LVGL and Qt, the MBM-T113 is perfect for HMI applications in smart homes, industrial automation, and healthcare solutions. Small in size, big in possibilities.

Specification

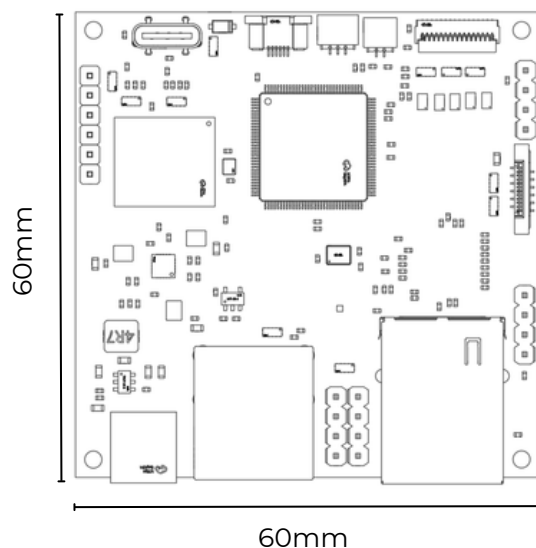
System	Processor	Dual-core ARM Cortex-A7 @ 1.2GHz
	RAM	On-chip Memory, 128MB/256MB DDR3
	Storage	32GB eMMC flash onboard and 1x Micro SD slot
	Display	MIPI DSI w/1080p60
	Touch	Support via I2C
	Ethernet	10/100Mbps
I/O Interface	Ethernet	1x RJ45 w/ LED indicator
	USB Port	2x USB 2.0 Type A (USB 1/2), 2x USB 2.0 via 1x 4P Header 1x Type C for Debug/FW update
	UART	3x UART with flow control (UART 1/2, 1x4P Header; UART3, 1x6P Header)
	GPIO	1x GPIO for external extension
	Audio	1x Headphone/Line-out; 1x MIC-in
	RTC	Support, via 1x PH 1.25mm



MBM-T113

Mobile-ITX Board

Dimension(mm)



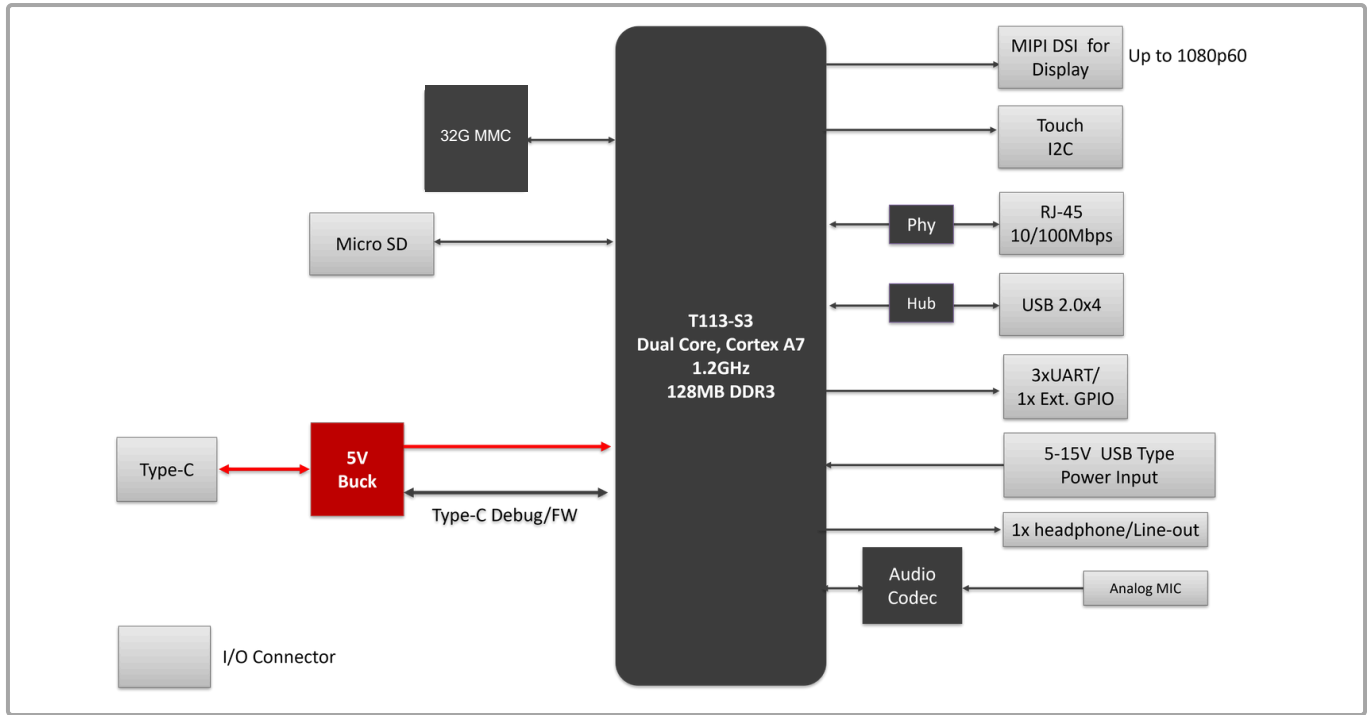
Specification

Power Input	5-15V Type C-PD Power Input
Form Factor	60x 60mm, Mobile-ITX
Operating Temperature	-10°C ~ 70°C
Operating System	Linux with LVGL, Qt, GTK+ support

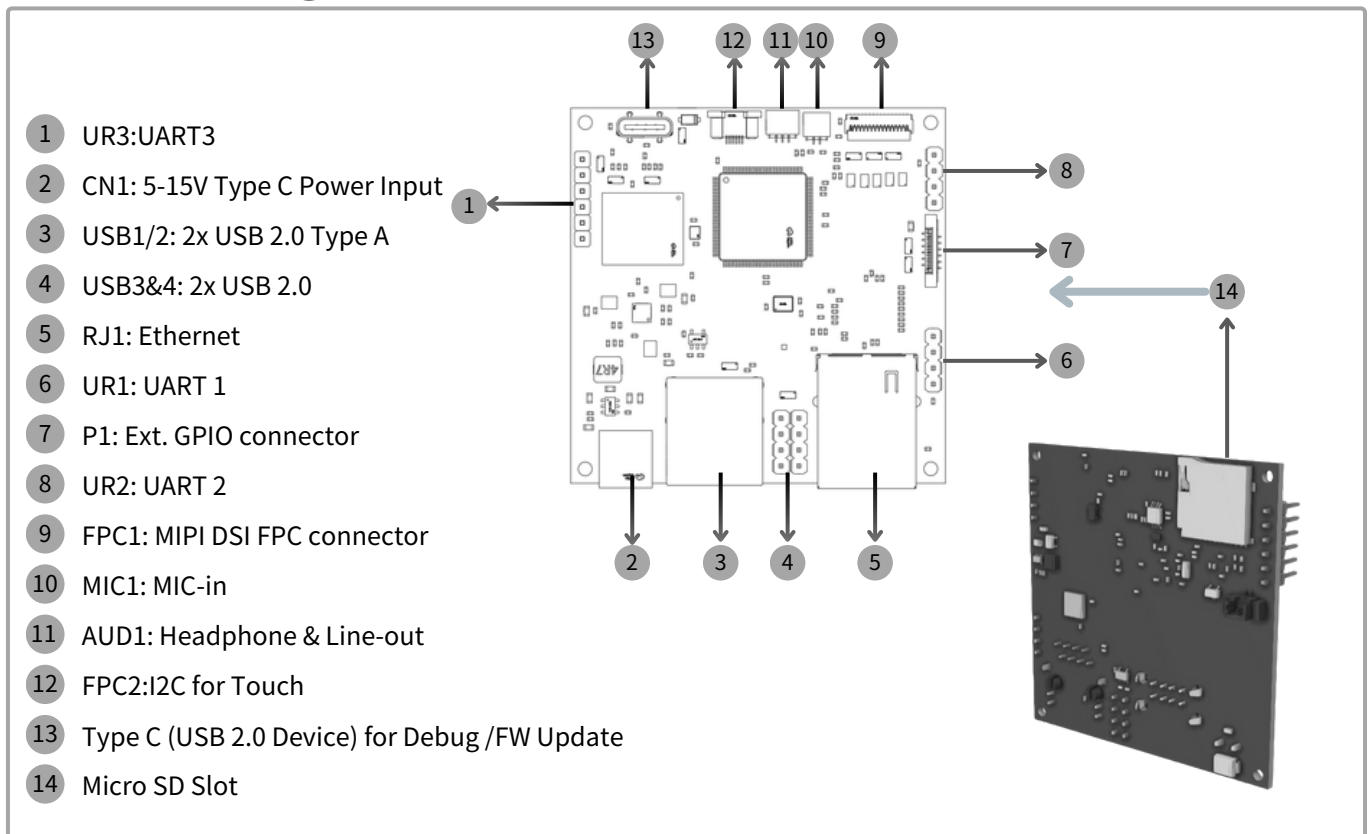
MBM-T113

Mobile-ITX Board

Block Diagram



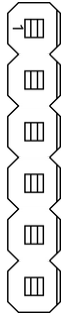
I/O Briefing



MBM-T113

Mobile-ITX Board

- 1 UR3: UART3
1x6-Pin Header, 2.54mm



PIN	Assignment
1	5V_SYS
2	UART1_RX
3	UART1_TX
4	UART1_CTS
5	UART1_RTS
6	GND

- 6 UR1: UART 1
1x4-Pin Header, 2.54mm

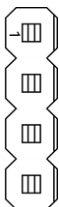


PIN	Assignment
1	3.3V
2	RX3
3	TX3
4	GND

- 4 USB3/4: 2x USB 2.0
1x4-Pin Header, 2.54mm

USB3

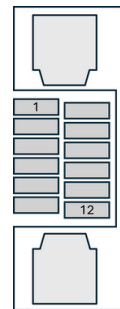
PIN	Assignment
1	VBUS_34
2	USB_HUB_P3_D-
3	USB_HUB_P3_D+
4	GND



USB4

PIN	Assignment
1	VBUS_34
2	USB_HUB_P4_D-
3	USB_HUB_P4_D+
4	GND

- 7 P1: Ext. GPIO connector
1x12-Pin Ext. GPIO connector, P:0.5mm



PIN	Assignment	PIN	Assignment
1	12V	2	12V
3	GPADC0	4	PD13
5	PD12	6	PD14
7	PD15	8	PD16
9	PD11	10	PD10
11	GND	12	GND

- 8 UR2: UART 2
1x4-Pin Header 2.54mm



PIN	Assignment
1	3.3V
2	I2C1-SCK_RX5
3	I2C1-SDA_TX5
4	GND

MBM-T113

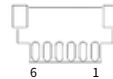
Mobile-ITX Board

- 9 FPC1: MIPI DSI, FPC Connector
1x 31-Pin FPC Connector, P=0.3mm
(FH35C-31S-0.3SHW(50))



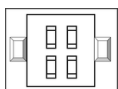
PIN	Assignment	PIN	Assignment
1	LED_A	2	LED_A
3	LED_A	4	N/A
5	LED_K	6	LED_K
7	LED_K	8	LED_K
9	GND	10	GND
11	MIPI_TXJ_D2+	12	MIPI_TXJ_D2-
13	GND	14	MIPI_TXJ_D1+
15	MIPI_TXJ_D1-	16	GND
17	MIPI_TXJ_CLK+	18	MIPI_TXJ_CLK-
19	GND	20	MIPI_TXJ_D0+
21	MIPI_TXJ_D0-	22	GND
23	MIPI_TXJ_D3+	24	MIPI_TXJ_D3-
25	GND	26	VDD_1P8
27	PG13_LCD_RST	28	GND
29	VDD_1P8	30	3V3
31	3V3		

- 12 FPC2: I2C for Touch
1x6-Pin FFC Connector, 0.5mm



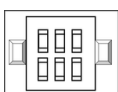
PIN	Assignment
1	GND
2	PG14_TP_INT
3	PG15_TP_RST
4	3V3
5	PC2_I2C0_SDA
6	PB3_I2C0_SCK

- 10 MIC: MIC-In
1x2-Pin wafer, 1mm



PIN	Assignment
1	MICIN+
2	MICIN-

- 11 AUD1: Headphone & Line-out
1x3-Pin wafer, 1mm



PIN	Assignment
1	HPOUTL
2	HPOUTR
3	GND

MBM-T113

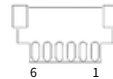
Mobile-ITX Board

- 9 FPC1: MIPI DSI, FPC Connector
1x 31-Pin FPC Connector, P=0.3mm
(FH35C-31S-0.3SHW(50))



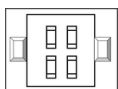
PIN	Assignment	PIN	Assignment
1	LED_A	2	LED_A
3	LED_A	4	N/A
5	LED_K	6	LED_K
7	LED_K	8	LED_K
9	GND	10	GND
11	MIPI_TXJ_D2+	12	MIPI_TXJ_D2-
13	GND	14	MIPI_TXJ_D1+
15	MIPI_TXJ_D1-	16	GND
17	MIPI_TXJ_CLK+	18	MIPI_TXJ_CLK-
19	GND	20	MIPI_TXJ_D0+
21	MIPI_TXJ_D0-	22	GND
23	MIPI_TXJ_D3+	24	MIPI_TXJ_D3-
25	GND	26	VDD_1P8
27	PG13_LCD_RST	28	GND
29	VDD_1P8	30	3V3
31	3V3		

- 12 FPC2: I2C for Touch
1x6-Pin FFC Connector, 0.5mm



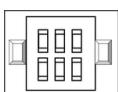
PIN	Assignment
1	GND
2	PG14_TP_INT
3	PG15_TP_RST
4	3V3
5	PC2_I2C0_SDA
6	PB3_I2C0_SCK

- 10 MIC: MIC-In
1x2-Pin wafer, 1mm



PIN	Assignment
1	MICIN+
2	MICIN-

- 11 AUD1: Headphone & Line-out
1x3-Pin wafer, 1mm



PIN	Assignment
1	HPOUTL
2	HPOUTR
3	GND