

# HB10

Host board for TM3 series.

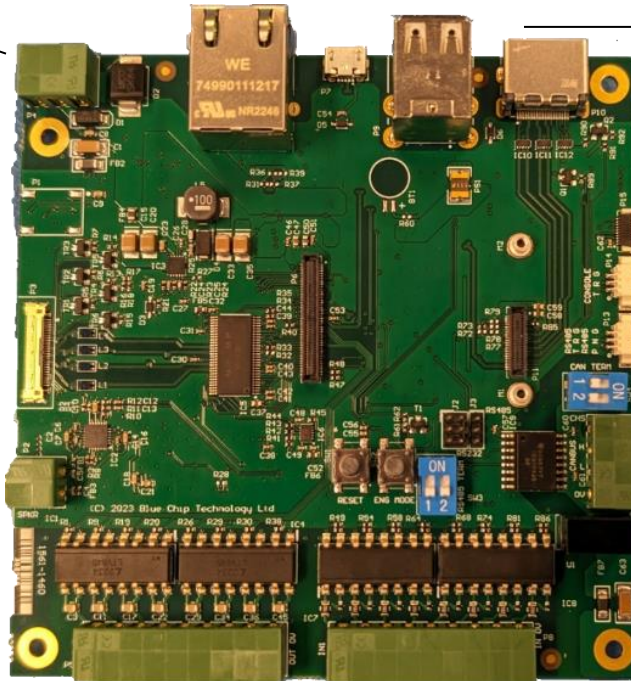


## 6-32Vdc Power supply

Wide supply range for simple system integration. Available with 3.5mm jack or screw terminal power connector.

## Comprehensive LCD & HDMI support

HB10 can be easily connected to Blue Chip's standard LCD range: 4.3", 7", 9.7" & 12", there is also a HDMI output for operation with larger screens. PCAP touch is supported with all LCD options.



## Powerful onboard interfaces

Comprehensive industrial interfaces: 10/100 Ethernet, USB2 x 2.0, HDMI, 10W Class D 4/8 Ohm audio amp. RS232/485 UART, RTC.

## Isolated 24V inputs & outputs

8x24Vdc Input,  
8x 50mA Output,  
1 x CAN FD.  
Isolation barrier 5kV.

## SUMMARY

HB10 offers a host board solution for the powerful quad core TM3 computer on module with support for isolated inputs, outputs and CAN FD / 2.0B. A wide range 6-32Vdc power supply for rapid integration to industrial environments.

Isolated inputs and outputs offer trouble free safe interaction with other elements of your design. E.g. 4 inputs and outputs can be configured to scan a keypad and present mapped key presses to the OS for extremely simple integration to your application.

The CANbus FD/2.0b and RS232/485 UART interfaces offer onboard selectable termination ensuring ease of installation into different system configurations. Both interfaces have full kernel level integration, CAN J1939 even supported directly.

Support for Blue Chip Technology's standard LCDs and touch panels enables integration to Beta Industrial Panel Computer assemblies for compact sub assembly that brings a simple to install, high quality aesthetic appearance to your user interface. HB10 variants support 4.3", 7", 9.7" and 12" LCDs with PCAP or Resistive touch. A HDMI 2.0 4K60i output is also available to drive larger displays.

The onboard battery backed RTC can be offered with CR2032 coin cell or compact rechargeable battery options offering a choice between extended unpowered operating time and elimination of a serviceable coin cell.

The TM3 computer-on-module offers an excellent compromise between, cost, performance, and connectivity and offers the flexibility to implement applications in Linux, Android or via Blue Chip Technology's innovative BetaWeb application that enables full, high speed, low latency access to the system hardware via remote or locally served HTML5/Javascript web pages.

# HB10

## TECHNICAL SPECIFICATIONS

### Core System

Processor	Via addition of TM3 computer on module Allwinner H6 ARM Cortex™ A53 Quad CPU Core 1.4GHz CPU Clock Speed 32KB L1 Instruction Cache 32KB L1 Data Cache 512KB unified I/D L2 Cache NEON MPE Coprocessor with SIMD MP
Memory	1GB Low Power DDR3 or 2GB Low Power DDR4
Graphics	Mali-T720 Multi-core GPU supporting OpenGL ES3.1  Video engine supporting multiple graphics overlays, scaling, dual independent displays, and alpha blending
HDMI <sup>LT</sup>	2.0, 4K@60Hz, dual independent screen support, LCD+HDMI in Linux only)
LCD (HB build options)	HB8 4.3", HB8 7" – RGB + backlight PSU HB9 9.7", HB9 12" – LVDS + back light PSU
Security	ARM TrustZone – Secureboot Full disk encryption*
Storage	8GB eMMC5.1 Flash – Onboard TM3 Micro SD Card socket
Audio	10W Class D amplifier for 4/80hm speaker
Operating System Support	Ubuntu Linux 22.04 LTS Balena OS Android 9
Real Time Clock	Yes, default battery backup via 2-Way connector to BR2032 coin cell. Onboard rechargeable cell via factory build option
Watchdog	Yes

### I/O

Ethernet	10/100 Mbit LAN - physical layer on TM3 module Supports Auto MDIX
Wireless*	Via TM3 with wireless capability Wi-Fi 802.11 a/b/g 2.4GHz Station and Access Point operation, BLE 5.0 (BT Classic is <b>NOT</b> supported) Single UFL connector for both devices Recommended antenna for R&TTE compliance
Serial	1 UART up to 115200bps operation @ RS232 voltage levels supports RS485 @ 3V via a jumper 2 x USB 2.0 Host (HS, FS, LS) Type A 1 x USB 2.0 Device (HS & FS) Type B 1 x CAN FD / 2.0b – 5kV isolated, switch selectable termination.
GPIO	8 x 24Vdc, 5kV isolated inputs 8 x 24Vdc, 50mA outputs  5kV isolation barrier

### Power

Input Voltage	6.0 to 32 Volts DC (12" LCD requires 12Vdc minimum)
Power	Peak current (headless) no USB devices 10V – 361mA, 12V – 309mA, 24V – 157mA Average current ~65% of above

### Physical

Operating Temperatures	Standard -20°C to 70°C Humidity 20% to 80% non-condensing
Dimensions & Mounting	200mm x 200mm
Approvals	CE, UKCA Thermal