**Features**

- Small form factor 1.8” SBC for space-limited applications
- Single Channel DDR4 Memory Down up to 4GB/8GB
- HDMI 1.4 resolution supports up to 4096x2160 @ 60Hz
- Expansion and Storage: 1 Mini PCIe, 1 SMBus
- Rich I/O: 1 Intel GbE, 1 USB 3.1 Gen 2, 2 Micro HDMI

**Mechanical Drawing**

**Block Diagram**
Specifications

SYSTEM
Processor: AMD® Ryzen™ Embedded R1606G, Dual Core, 1MB Cache, 3 CU, 2.6GHz (3.5GHz), 12W
AMD® Ryzen™ Embedded R1505G, Dual Core, 1MB Cache, 3 CU, 2.4GHz (3.3GHz), 12W
AMD® Ryzen™ Embedded R1305G, Dual Core, 3 CU, 1.5GHz (2.8GHz), 8-10W (Coming soon)
AMD® Ryzen™ Embedded R1102G, Dual Core, 3 CU, 1.2GHz (2.6GHz), 6W (Coming soon)

Memory: DDR4 Memory Down up to 4GB/8GB

BIOS: AMI SPI 64bit

GRAPHICS
Controller: AMD Vega GPU with up to 3 computing units.
Feature: H.265 decode/encode support, VP9 decode
Display: 2 x Micro HDMI, HDMI 1.4: resolution up to 4096x2160 @ 24Hz

EXPANSION
Interface: 1 x Full-size Mini PCIe (PCIe Gen2/USB 2.0, opt: USB 3.1 Gen2/USB 2.0)

ETHERNET
Controller: 1 x Intel® I211AT PCIe (10/100/1000Mbps) or 1 x Intel® I210IT PCIe (10/100/1000Mbps) (available upon request)

REAR I/O
Ethernet: 1 x GbE (RJ-45)
USB: 1 x Type C USB 3.1 Gen 2
Display: 2 x Micro HDMI (HDMI 1.4)

INTERNAL I/O
DIO: 1 x 8-bit DIO
SMBus: 1 x SMBus

SOFTWARE
TFTM
Type: Single 12V +/-5% DC
Connector: 2-pin Terminal Block
Consumption: Typical: R1505G: 12V @ 0.37A (4.44W) Max: R1505G: 12V @ 1.74A (20.88W)

RTC Battery: CR2032 Coin Cell

OS SUPPORT (UEFI Only)
Microsoft/Linux: Windows 10 IoT Enterprise 64-bit Linux (Kernel 5.3)

ENVIRONMENT
Temperature: Operating: 0 to 60°C / -20 to 70°C (opt.) Storage: -40 to 85°C
Humidity: Operating: 5 to 90% RH Storage: 5 to 90% RH
MTBF: TBD

MECHANICAL
Dimensions: 1.8" SBC Form Factor 84mm (3.31") x 55mm (2.17")
Height: PCB: 1.60mm Top Side: 13.8mm, Bottom Side: 2.00mm

Ordering Information

<table>
<thead>
<tr>
<th>Model Name</th>
<th>P/N</th>
<th>Processor</th>
<th>Memory</th>
<th>eMMC</th>
<th>Display</th>
<th>GbE</th>
<th>USB 3.1 Gen 2</th>
<th>Power</th>
<th>Thermal</th>
<th>Temp.</th>
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</thead>
<tbody>
<tr>
<td>GHF51-BN-43R15</td>
<td>770-GHF51-000G</td>
<td>R1505G</td>
<td>4 GB</td>
<td>32 GB</td>
<td>2 Micro HDMI</td>
<td>1</td>
<td>1</td>
<td>12VDC</td>
<td>Fanless</td>
<td>0 to 60°C</td>
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<tr>
<td>GHF51-BN-43R16</td>
<td>770-GHF51-100G</td>
<td>R1606G</td>
<td>4 GB</td>
<td>32 GB</td>
<td>2 Micro HDMI</td>
<td>1</td>
<td>1</td>
<td>12VDC</td>
<td>Fanless</td>
<td>0 to 60°C</td>
</tr>
</tbody>
</table>

Packing List

- 1 GHF51 board
- 1 Heat sink (Height: 30mm)
- 1 2-pole terminal to DC jack cable
- 1 DIO cable
- 1 Screw of Mini PCIe card

Optional Items

- Power adapter (60W, 12V, DC jack)
- SMBus cable
- Front panel cable
- Heat spreader (Height: 11mm)

Note: The combination is only for MVT sample and subject to change at mass production.

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