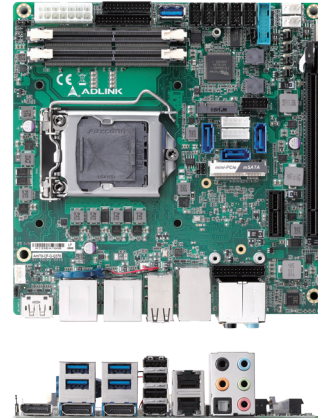


# AmITX-CF-G

## Mini-ITX Embedded Board with 8th/9th Gen Intel® Core™ Desktop Processor

### Features

- 8th/9th Gen Intel® Core™ i7/i5/i3, Intel® Pentium® and Celeron® Desktop Processor with Intel® Q370/H310 Chipset
- Up to 32GB dual channel DDR4 at 2400MHz
- PCIe x16, PCIe x1, M.2 and Mini-PCIe expansion
- 3 DisplayPort outputs on rear IO (Q370)
- Supports Smart Embedded Management Agent (SEMA®) functions
- 2x USB 3.1 Gen 1 onboard header (H310: 1x USB 2.0)
- 4x USB 3.1 Gen 1



### Specifications

#### Processor & System

##### CPU

Embedded 9th Generation Intel® Core™ i7/i5/i3 and Pentium®/Celeron® Processor, LGA1151 socket

Intel® Core™ i7-9700TE Processor, 8C, 1.8/3.8GHz, 12M, 35W

Intel® Core™ i7-9700E Processor, 8C, 2.6/4.4GHz, 12M, 65W

Intel® Core™ i5-9500TE Processor, 6C, 2.2/3.6GHz, 9M, 35W

Intel® Core™ i5-9500E Processor, 6C, 3.0/4.2GHz, 9M, 65W

Intel® Core™ i3-9100E Processor, 4C, 3.1/3.7GHz, 6M, 65W

Intel® Core™ i3-9100TE Processor, 4C, 2.2/3.2GHz, 6M, 35W

Embedded 8th Generation Intel® Core™ i7/i5/i3 and Pentium®/Celeron® Processor, LGA1151 socket

Intel® Core™ i7-8700 Processor, 6C, 3.2/4.6GHz, 12M, 65W

Intel® Core™ i7-8700T Processor, 6C, 2.4/4.0GHz, 12M, 35W

Intel® Core™ i5-8500 Processor, 6C, 3.0/4.1GHz, 9M, 65W

Intel® Core™ i5-8500T Processor, 6C, 2.1/3.5GHz, 9M, 35W

Intel® Core™ i3-8100 Processor, 4C, 3.6GHz, 6M, 65W

Intel® Core™ i3-8100T Processor, 4C, 3.1GHz, 6M, 35W

Intel® Pentium® Gold G5400 Processor, 2C, 3.7GHz, 4M, 58W

Intel® Pentium® Gold G5400T Processor, 2C, 3.1GHz, 4M, 35W

Intel® Celeron® G4900 Processor, 2C, 3.1GHz, 2M, 54W

Intel® Celeron® G4900T Processor, 2C, 2.9GHz, 2M, 35W

##### Chipset

Intel® Q370/H310 Chipset

##### BIOS

AMI EFI in 16MB SPI BIOS

Optional SPI BIOS socket onboard and SPI header for external BIOS,

dual BIOS support

TPM module soldered onboard

##### Debug Header

40-pin multipurpose flat cable connector. Use in combination with DB-40 debug module providing BIOS POST code LEDs, BMC access, SPI BIOS, flashing, power testpoints, debug LEDs

#### Memory

Dual channel non-ECC 2400 MHz DDR4 memory up to 32GB in dual vertical SODIMM sockets

#### Board Management Controller

Supports: voltage monitoring, system and CPU temperature monitoring, smart fan control, logistics and forensic information, general purpose I<sup>2</sup>C, watchdog timer

#### I/O Interfaces

##### Expansion Slots

1x PCIe x16 Gen3 slot

1x PCIe x1 Gen3 slot (Q370: PCIe 3.0 / H310: PCIe 2.0)

1x (optional) full-size Mini-PCIe slot (PCIe x1 and mSATA; USB 2.0 with Q370) (top side)

1x (optional) M.2 (M key, 2242, support NVMe; H310: PCIe 2.0 x 1 signal) (top side)

1x SPI header for external BIOS

##### Serial ATA

3x SATA 6 Gbps ports (Jumper select NA/3.3V/5V for SATA1 and SATA2 to deliver power by SATA pin7; Default is NA)

2x SATA power connector

##### USB

4x USB 3.1 Gen 1 and 4x USB 2.0 on rear I/O

2x USB 3.1 Gen 1 onboard header (H310 : 1x USB 2.0)

1x USB 3.1 Gen 1 on vertical connector with keep out area for dongle (H310: USB 2.0)

##### Serial Ports (9 bit protocol support)

1x RS-232/422/485 on internal header

3x RS-232 on internal headers

1x CCTALK x2 on internal header

##### Digital IO

8x GPIO via onboard feature connector

## Specifications

### • Audio

#### Audio Codec

Realtek® ALC888

#### Interfaces

7.1 channel audio via 5 jacks and S/PDIF output on rear I/O

7.1 channel audio signals and S/PDIF output on internal header

### • Display

#### Graphics Core

Intel® 9.5th generation LP graphics core architecture with up to 24 execution units supporting DirectX 12, OGL4.5, and up to three independent, simultaneous displays

#### DisplayPort

Up to 3x DisplayPort v1.2 with max resolution of 4096x2304@60Hz  
3x DisplayPort(Q370) , 2x DisplayPort (H310)

### • Ethernet

Controller: 2x Realtek RTL8111G Ethernet controller

Interface: PCI Express x1 Bus

10/100/1000 GbE connection

### • Power

Standard Input: ATX: 12V ±5% / 5Vsb ±5%

AT: 12V ±5%

Peripheral Output: Onboard headers for fan and SATA power

ATX Power Connector (14-pin)

### • Mechanical and Environmental

Dimension (mm): 170 mm x 170 mm (L x W)

#### Operating Temperature

Standard: 0°C to +60°C

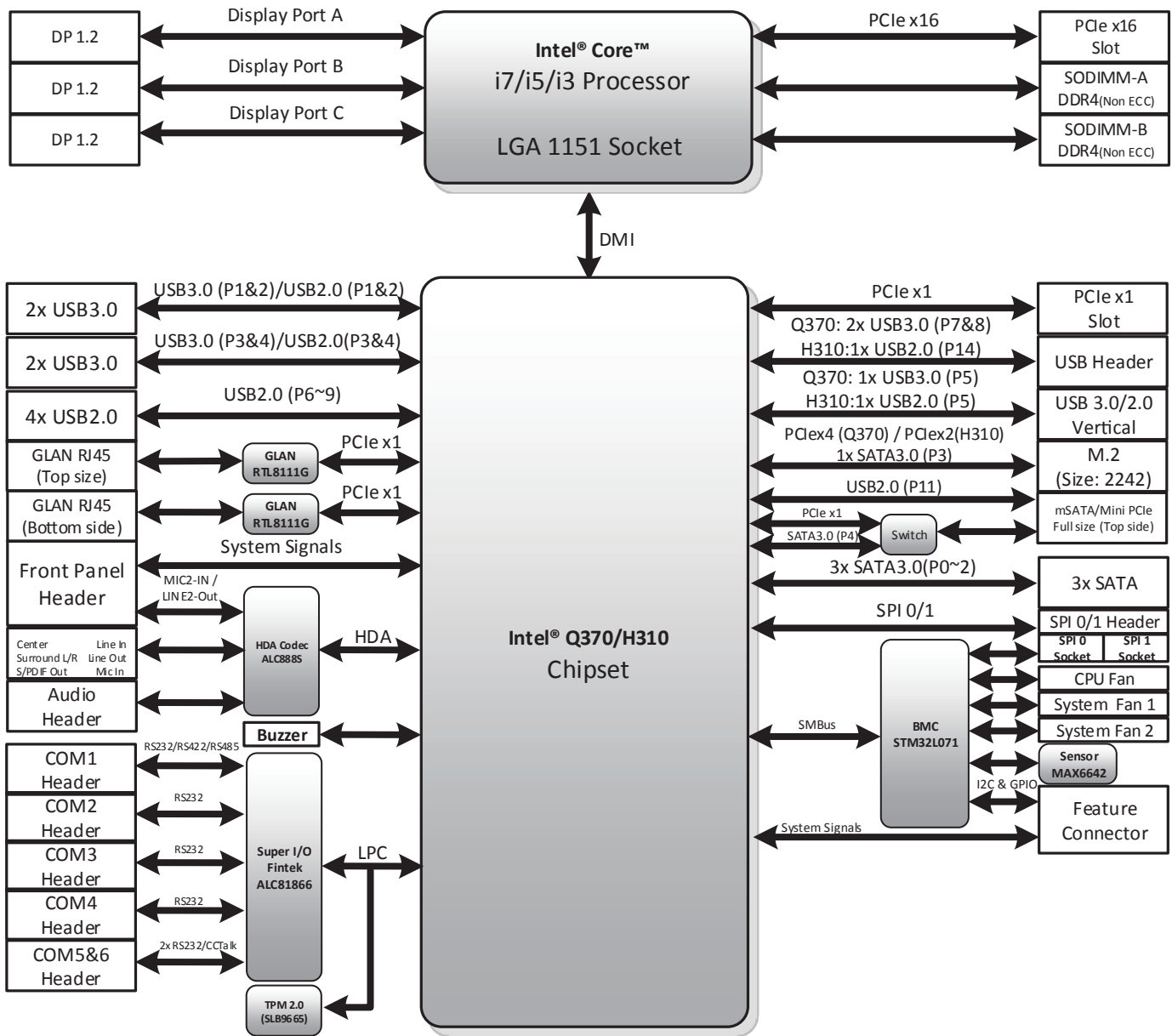
Storage Temperature: -20°C to +80°C

Certification: CE, FCC Class A

#### Relative Humidity

40° C @ 95% RH Non-condensing

## Functional Diagram



# AmITX-CF-G

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## Ordering Information

- **AmITX-CF-G-Q370**  
Mini-ITX Embedded Board with 8th/9th generation Intel® Core™ i7/i5/i3 Desktop Processor with Q370 Chipset
- **AmITX-CF-G-H310**  
Mini-ITX Embedded Board with 8th/9th generation Intel® Core™ i7/i5/i3 Desktop Processor with H310 Chipset

## Optional Accessories

- **30-20876-0000**  
COM Port Cable, 1 Port, 25cm
- **30-20873-0000**  
USB 3.0 Cable, 2 ports, 20cm (for AmITX-KB-G-Q370)
- **30-20874-1000**  
USB 2.0 Cable, 2 ports, 20cm (for AmITX-KB-G-H310)
- **32-20581-0000**  
LGA1150 CPU Cooler, H=59.52mm, 35W
- **32-20818-1000-A0**  
LGA1150 CPU Cooler, H=65.6mm, 65W

## Packing List

- **30-20872-0000**  
ATX/AT Power Cable
- **30-20875-0000**  
SATA Dual Power Cable
- **30-10057-0600**  
SATA Cable
- **34-25314-1000**  
Rear I/O Shield