



Board Specification

WinFast® RTX 2070 (MPN: 32778101101)

Graphics Board (LR 2778)

96VG-NR2070F16-6D

Document Change History

Version	Date	Responsible	Description of Change
01	11/21/2018	Cruise	Initial release
02	12/04/2018	Cruise	1.Update Product IMAGE 2.Add PLACEMENT OF Power CONNECTORS

TABLE OF CONTENTS

Overview	4
Specifications.....	4
Product Specifications	5
Memory Specifications	5
Software Specifications.....	6
Display Specifications.....	6
Thermal Specifications.....	6
Input EDP Continuous Specifications.....	6
Board Environmental and Reliability Specifications.....	7
Power connector Define.....	7
Mechanical Specifications.....	8
Form Factor.....	8
Placement of Standard I/O Connectors	8
Support Information.....	9
Operating System Support.....	9
System Requirements.....	9
Certificates and Agencies.....	9
Package Content.....	9

Overview

The Leadtek WinFast® RTX 2070 graphics board is a PCI Express full-height (111mm by 267mm) form factor graphics add-in card based on the new NVIDIA® Turing GPU,

The Leadtek WinFast® RTX 2070 offer 8G HIGH-bandwidth GDDR6 memory in 256-bit configuration and supports HDMI, 3 x DP and DVI-D. The use of all solid aluminum capacitors also provides ultra-high durability and stability even during overclocking.



Product Specifications

Specification		Description
Product Name		WinFast RTX 2070
GPU Architecture		NVIDIA Turing GPU(TU106)
Physical dimensions		111mmx267mm; 2 slot
CUDA Cores		2304
GPU clocks	Base	1410 MHz
	Boost	1620 MHz
VBIOS		UEFI Supported
PCI Express interface		PCI Express 3.0 ×16
Display connectors		3 x DisplayPort® connectors (1.4) 1 x HDMI(2.0b) 1 x DVI-D
Multi Monitor		4
Power connectors and headers		PCIe power connectors: One 8-pin
OpenGL®		4.5
DirectX® Capability		DirectX® 12 API
NVIDIA NVLink		NO
Decoder(NVIDIA GPU)		HEVC/H.264/VP9/VC1/MPEG-1,2,4
Total graphics power (TGP)		175 W
PCI IDs		Device ID:1F02(07) Vendor ID:10DE Sub-Vendor ID:107D Sub-System ID:2778

Memory Specifications

Specification	Description
Memory Size	8G GDDR6
Memory clock	14 Gbps
Memory bus width	256 bits
Memory bandwidth	Up to 448 GB/s

Software Specifications

Specification	Description
Bar address	BAR0: 16 MB BAR1: 256 MB BAR2: 34 MB I/O BAR: 128B
PCI class code	0x03-Display controller
PCI sub-class code	0x00 VGA-Compatible controller
HDCP support	2.2

Display Specifications

Specification	Version	Maximum Digital Resolution
DisplayPort	1.4 ₍₁₎	7680x4320 x36 bpp at 60Hz
HDMI	2.0b	3840x2160 x24 bpp at 60Hz
DVI-D	Dual-Link	2560x1600 at 60Hz

Notes:

1.DisplayPort 1.2 Certified, DisplayPort 1.3/1.4 Ready.

Thermal Specifications

Parameter	Value	Units
Total graphics power (TGP)	175	W
GPU shutdown temperature	94	°C
GPU slowdown temperature (50% clock slowdown)	91	°C
Maximum fan inlet temperature	45	°C

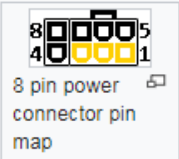
Input EDP Continuous Specifications

Input Rails	Maximum Value	Moving Average
PCI Express edge connector (12V)	66 W	1 s
	5.5 A	1 s
PCIe 8-pin power connector (12V)	150W	1 s
	12.5 A	1 s
Total graphic power	175 W	1 s

Board Environmental and Reliability Specifications

Specification	Condition
Operating temperature	0 °C to 45 °C
Storage temperature	-40 °C to 75 °C
Operating humidity	5% to 95% relative humidity
Storage humidity	5% to 95% relative humidity

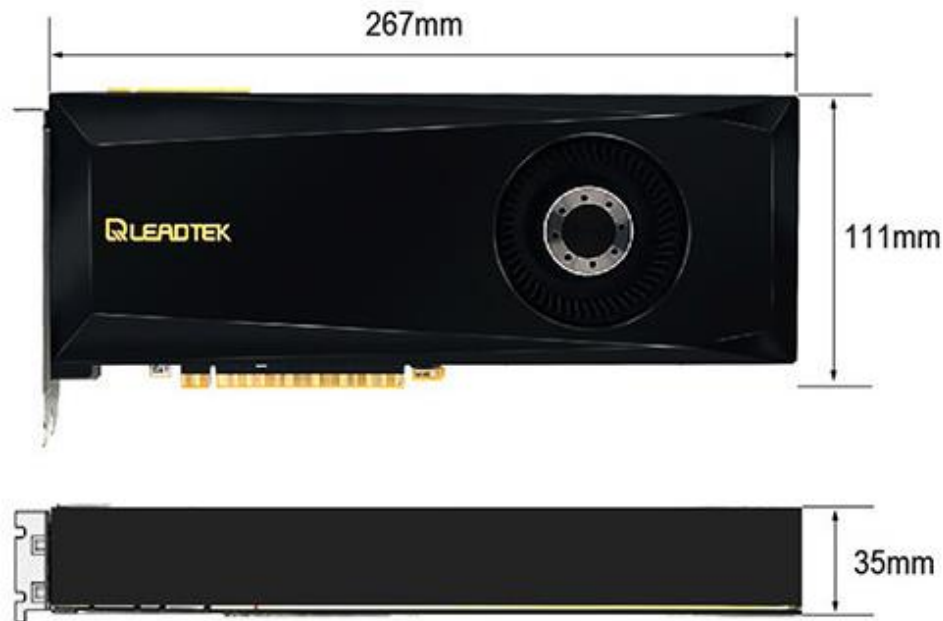
Power connector define

8-pin Power connector		
 8 pin power connector pin map	1	+12 v
	2	+12 v
	3	+12 v
	4	Sense1
	5	Ground
	6	Sense0
	7	Ground
	8	Ground

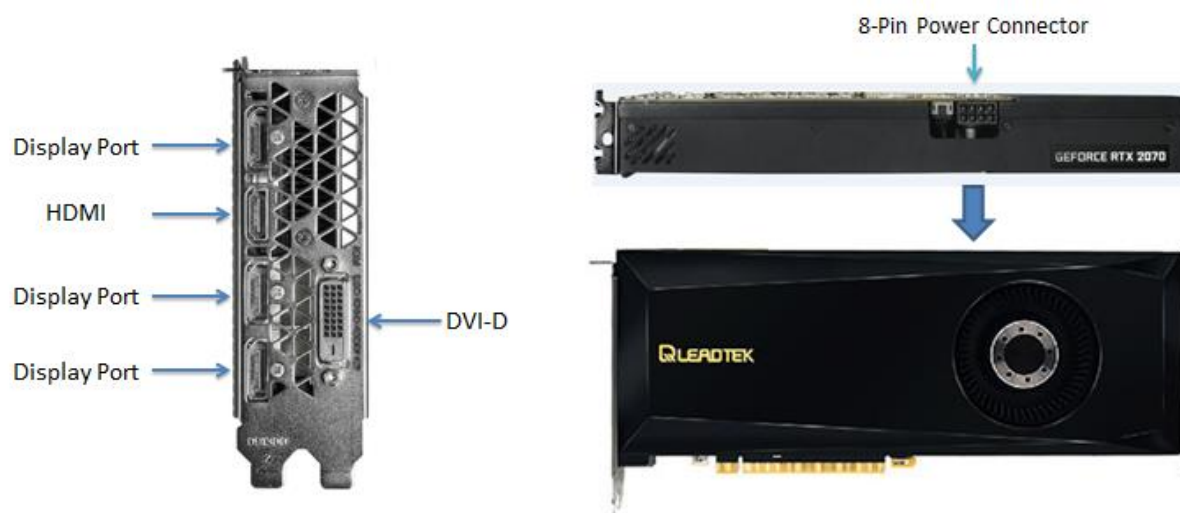
Mechanical Specifications

FORM FACTOR

The Leadtek WinFast® RTX 2070 graphics board conforms to the PCI Express full height (111 mm by 267 mm) form factor graphics add-in card.



PLACEMENT OF STANDARD I/O CONNECTORS



Support Information

Operating System Support

- Microsoft Windows® 10 64-bit (April 2018 Update or later), Windows 7 64-bit,
- Linux 64-bit

System Requirements

- PCI Express-compliant motherboard with one dual-width x16 graphics slot
- 550 W or greater system power supply
- 1.5 GB available hard-disk space
- 8 GB system memory (16GB recommended)
- Microsoft Windows® 10 64-bit (April 2018 Update or later), Windows 7 64-bit, Linux 64-bit
- One 8-pin supplementary power connector

Certificates and Agencies

- Conformité Européenne (CE)
- Federal Communications Commission (FCC)
- Korea Communications Commission(KC)
- RoHS

Package Content

- WinFast RTX 2070
- Quick installation guide and software disc
- 8-pin power Cable x 1

Copyright

© 2018 by Leadtek Research Inc. All rights reserved.