



RSB-5780

Release Note

Released Version:V251009
Released Date: 2021-03-25

Advantech Co., Ltd.

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ABSTRACT

This document describes how to use diagnostic tool for board functionality verification.

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Part No.

Version: 1.00

Printed in Taiwan 2021-03-25

1. Hardware Information

CPU: RK3399

2. Software Information

Debian 10

3. Release Version

| Rev | Date | Description | Release by |
|-----------|------------|-------------------|------------|
| DIV251009 | 2021-03-25 | The first release | Jinmin.xu |
| | | | |

4. Add New Features

5. Function Test

| Module | Test Steps | Result |
|------------------|--|-------------|
| CPU Cores | CPUinfo under kernel cat /proc/cpuinfo grep "processor" wc -l | PASS |
| CPU Speed | A72 cat /sys/devices/system/cpu/cpufreq/policy4/cpuinfo_max_freq | PASS |
| | A53 cat /sys/devices/system/cpu/cpufreq/policy0/cpuinfo_max_freq | PASS |
| CPU DVFS | cat /sys/devices/system/cpu/cpufreq/policy0/scaling_cur_freq cat /sys/devices/system/cpu/cpufreq/policy4/scaling_cur_freq | PASS |
| memeory | check meminfo capacity cat /proc/meminfo | PASS |
| | Check memory clock under kernel cat /sys/class/devfreq/dmc/cur_freq | PASS |
| | memtester 1000M 5 | PASS |
| GPU | check gpu working using benchmark or web http://webglsamples.org | PASS |
| | Check GPU clock cat /sys/class/devfreq/ff9a0000.gpu/ | PASS |
| VPU | Play video and check decoding mode | PASS |
| PMIC | 1.8V/3.3V/5V voltage,reset,poweroff | PASS |

| | | |
|------------------|---|-------------|
| DEBUG | config as normal uart port | PASS |
| UART | System debug message output and input | PASS |
| SD | SD card read/write | PASS |
| eMMC | emmc read/write | PASS |
| SATA | read/write | PASS |
| SPI Flash | read/write | PASS |
| I2C | i2cdetect i2cget i2cset | PASS |
| LAN | RGMII | PASS |
| UART | ttyS0: cn15 | PASS |
| | ttyS4: com1 | PASS |
| USB2.0 | USB disk read/write cat /sys/bus/usb/devices/5-1/speed | PASS |
| USB3.0 | USB disk read/write cat /sys/bus/usb/devices/5-1/speed | PASS |
| USB OTG | Host mode | PASS |
| | Slave mode | PASS |
| HDMI | Audio Play | PASS |
| | Multiple resolution:720p@60Hz/1080p@60Hz/4K@60Hz... | PASS |
| DP | Audio Play | PASS |
| | Multiple resolution:720p@60Hz/1080p@60Hz/4K@60Hz... | PASS |
| LVDS | Backlight adjustment | PASS |
| | lvds-g070vw01 | PASS |
| eDP | Backlight adjustment | PASS |
| | edp-1366x768 | PASS |
| | edp-1920x1080 | PASS |

| | | |
|---------------------|--|-------------|
| MIPI CSI 2 | csi : ov8858 | PASS |
| MIPI DSI/CSI | csi : ov8858 | PASS |
| RTC | date 2021-03-01 17:11:22 hwclock -w | PASS |
| TPM | i2cdetect i2cget i2cset | PASS |
| Audio | cn39: rt5648 | PASS |
| Codec | cn40:rt5648 | PASS |
| GPIO | GPIO input/output | PASS |
| Watchdog | cat /dev/watchdog | PASS |
| Power Button | Power off/Power on | PASS |
| SW reboot | reboot | PASS |
| M.2 | EWM-W188 | PASS |
| mini PCIE | EC25 | PASS |
| tools | mac_write | PASS |
| | RKDevTool | PASS |
| | SDDiskTool | PASS |

6. Performance

| Module | Test Steps | Result | Remark |
|------------------|---|-------------|--|
| Benchmark | apt install hardinfo cpu:benchmarks---cpu blowfish(eg:5.91s) 2D:benchmarks---gpu drawing(eg:5418) 3D:taskset -c 4-5 glmark2-es2 | PASS | cpu: blowfish 5.97 2D: cpu drawing 5618.91 3D: hdmi only, glmark2 58 |

| | | | |
|---------------|---|-------------|--|
| lan | throughput: pc: iperf3 -s ARM: iperf3 -c 192.168.1.1 -i 5 -d -t 180 | PASS | 0.00-180.00 sec 18.4 GBytes 880 Mb/s sender 0.00-180.00 sec 18.4 GBytes 880 Mb/s receiver |
| | Packet Lost: pc: iperf3 -s ARM: iperf3 -c 192.168.1.1 -u -b 80M -t 43200 -l 60k | PASS | [0.00-43200.86 sec 0.00 Bytes 0.00 bits/sec 0.152 m (0.026%) |
| eMMC | read: dd if=/dev/mmcblk1 of=/dev/ram0 bs=1M count=4 conv=fsync write: dd if=/dev/ram0 of=/dev/mmcblk1 bs=1M count=4 conv=fsync | PASS | read: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.0274701 s, 153 MB/s write: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.0445486 s, 94.2 MB/s |
| usb2.0 | read: dd if=/dev/sdb of=/dev/ram0 bs=1M count=4 conv=fsync write: dd if=/dev/ram0 of=/dev/sdb bs=1M count=4 conv=fsync | PASS | Test with sandisk 16G read: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.139796 s, 30.0 MB/s write: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.336005 s, 12.5 MB/s |
| usb3.0 | read: dd if=/dev/sdb of=/dev/ram0 bs=1M count=4 conv=fsync write: dd if=/dev/ram0 of=/dev/sdb bs=1M count=4 conv=fsync | PASS | Test with sandisk 16G read: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.0770822 s, 54.4 MB/s write: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.249662 s, 16.8 MB/s |
| sata | read: dd if=/dev/sda of=/dev/ram0 bs=1M count=4 conv=fsync write: dd if=/dev/ram0 of=/dev/sda bs=1M count=4 conv=fsync | PASS | Test with Toshiba MQ01ABF032 read: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.0148136 s, 283 MB/s write: 4194304 bytes (4.2 MB, 4.0 MiB) copied, 0.0997705 s, 42.0 MB/s |
| BurnIn | Run BurnIn.sh 4H | PASS | |