



# 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.

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### 1. Hardware Information

CPU: RK3399

### 2. Software Information

Ubuntu18.04

### 3. Release Version

Rev	Date	Description	Release by
UIV10031	2020-12-14	The first release	Yunjin.Jiang

## 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 MHz	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		PASS
VPU	echo 0x100 > /sys/module/rk_vcodec/parameters/debug	PASS
GPU	GPU 200M-800M http://webglsamples.org cat /sys/devices/platform/ff9a0000.gpu/utilisation	PASS
	cat /sys/class/devfreq/ff9a0000.gpu/cur_freq	

Thermal			
	Thermal Configuaration	PASS	
	Limit CPU frequence	PASS	
	Shutdown	PASS	
	meminfo under kernel		
	cat /proc/meminfo		
DDD	cat /sys/class/devfreq/dmc/cur_freq	PASS	
DDR	416M、856M		
		PASS	
	memtester	rass	
	config as normal uart port		
DEBUG	/dev/ttyS2	PASS	
UART	serial_test /dev/ttyS2 115200 n 10 2		
	System debug message output and input	PASS	
PMIC	1.8V/3.3V/5V voltage,reset,poweroff	PASS	
SD	Write/Read/Verify data in the start/end 4 byte of flash	PASS	
	Hotplug	PASS	
eMMC	Write/Read/Verify data in the start/end 4 byte of flash	DACC	
emine	under uboot/kernel	PASS	
SPI		PASS	
	i2cdetect i2cget i2cset		
I2C	i2cdetect -y 4	PASS	
	i2cdump -f -y 4 0x50		
T ANI	RGMII	PASS	
LAN	LAN7500	PASS	
	/dev/ttyS4	DACC	
	serial_test /dev/ttyS4 115200 n 10 2	PASS	
	/dev/ttyUSB0	PASS	
HADE	/dev/ttyUSB1	PASS	
UART	/dev/ttyUSB2 RS232	PASS	
	/dev/ttyUSB3 RS232	PASS	
	/dev/ttyUSB2 RS485	PASS	
	/dev/ttyUSB3 RS485	PASS	
USB2.0	port x5	PASS	
USB3.0	new SuperSpeed USB device	PASS	
USB OTG	FlashTool upgrade	PASS	

	Host (ADB )	PASS	
	Master	PASS	
LED	Power LED	PASS	
	Power Key LED	PASS	
	4G LED	PASS	
HDMI1	4K60Hz	PASS	
HDMI2	DP2HDMI	PASS	
	g070vw01	PASS	
LVDS	g150xgel05	PASS	
LVDS	g215hvn01	PASS	
	XUPOS-NT156FHM-N41	PASS	
eDP	15.6" LCD, 220nits, 1920x1080	PASS	
eDr	XUTC-B156XTN07.1	PASS	
	AUO 15.6", 1366 x 768, 220nits, for UTC project	1 1155	
	PWM0 edp		
	echo 10 >/sys/class/backlight/backlight0/brightness	PASS	
	echo 200 >/sys/class/backlight/backlight0/brightness		
PWM	PWM1 lvds		
	echo 10 >/sys/class/backlight/backlight1/brightness	PASS	
	echo 200 >/sys/class/backlight/backlight1/brightness		
MIPI CSI	OV8858	PASS	
	PT7C4337 ,synchron system time and hareware time		
	I2C0 0x68		
	/dev/rtc		
RTC	ntpdate 0.rhel.pool.ntp.org	PASS	
	hwclockhctosys		
	hwclocksystohc		
	RT5660	DACC	
	Speaker	PASS	
	RT5660	PASS	
Audio	LOUT	TASS	
	RT5660		
	MIC	PASS	
	arecord -f S16_LE -r 8000 -d 10 -t wav mac_10s.wav		

	RT5660		
	Line IN		
	amixer -c0 cset name="RECMIXL BST3 Switch" 1 amixer -c0 cset name="RECMIXR BST3 Switch" 1 arecord -f S16_LE -r 8000 -d 10 -t wav line_in_10s.wav		
	HDMI LOUT	PASS	
GPIO	GPIO in out(GPIO1~6)	PASS	
WATCHDOG	cat /dev/watchdog	PASS	
	w_wdt: watchdog cannot be disabled, system will reboot soon		
Power		PASS	
Button	Power on/off test		
Reset	Reset system	PASS	
Button	Software reboot	PASS	
	WLAN EWM-W188M201E	PASS	
PCIE	RTL8822BE		
PCIE	Bluetooth EWM-W188M201E	PASS	
	RTL8822BE		
M.2	Wlan AW-CM276MA	PASS	
	Marvell 88W8997		
IVI.2	Bluetooth AW-CM276MA	PASS	
	Marvell 88W8997		
mini PCIE	4G EC20	PASS	
SIM		PASS	
RUN	BurnIn	PASS	
	14 hours	PASS	