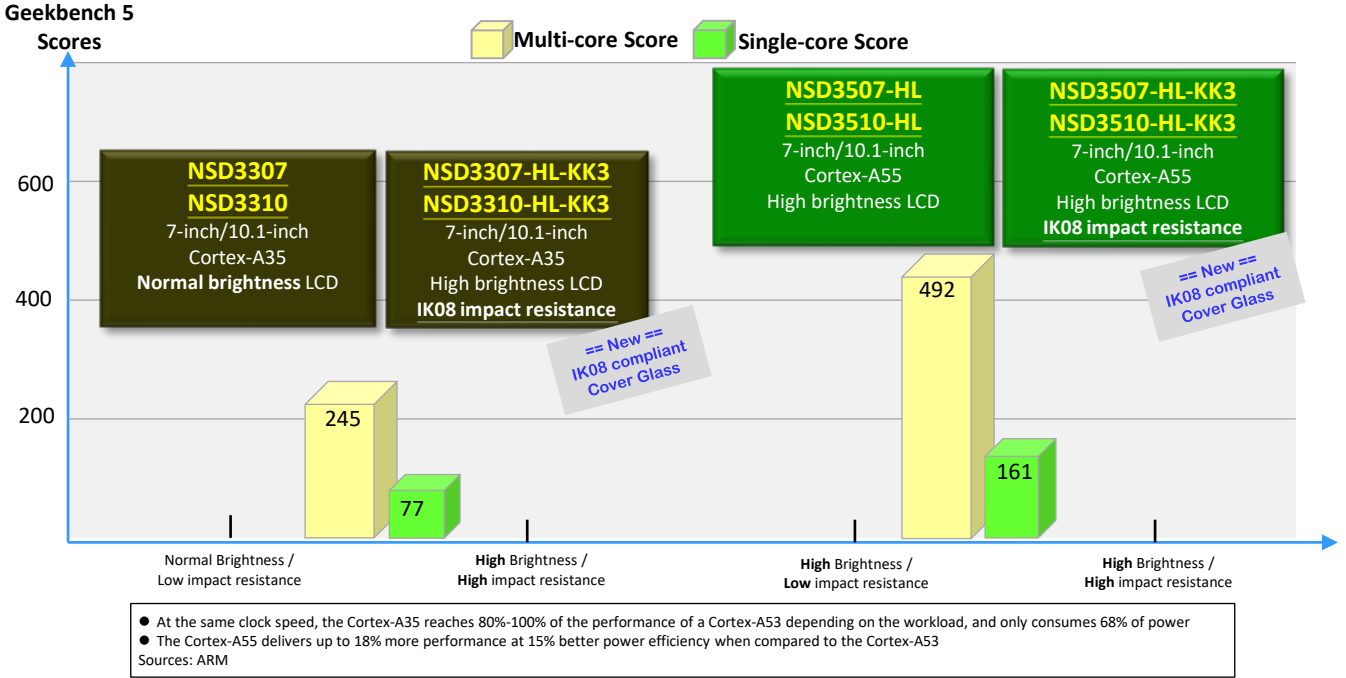


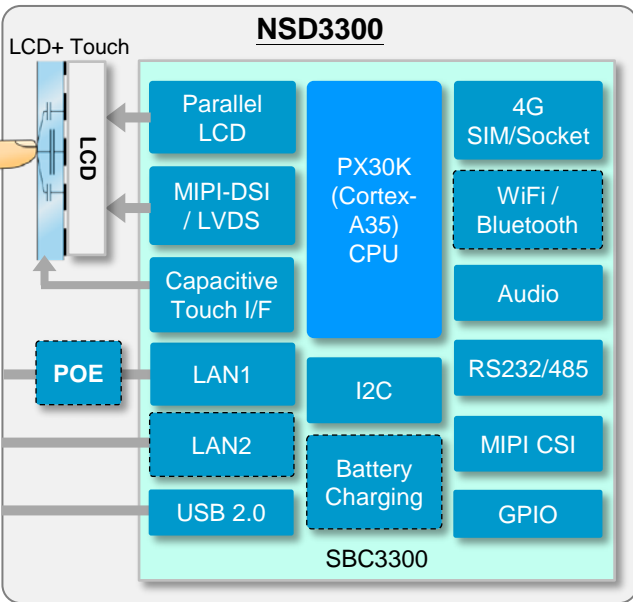
# NSD Smart Display Datasheet

## Cost-effective solution for HMI

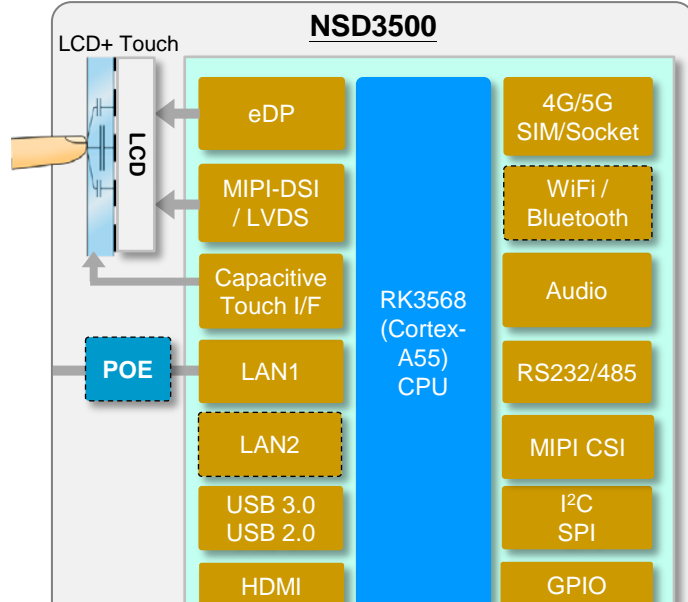
### [ Product Models ]



### [ NSD3300 Block Diagram ]



### [ NSD3500 Block Diagram ]



Option functions

Option functions

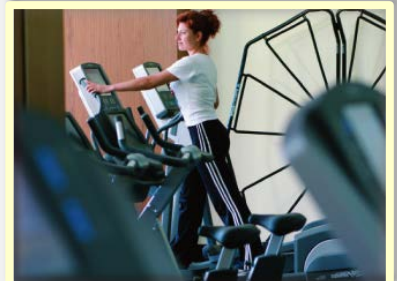
# NSD Smart Display Datasheet

Cost-effective solution for HMI

## Key Features

- Two series:
  - Lower Cost NSD3300 series
  - Higher performance NSD3500 series
- 7-inch / 10-inch TFT LCD
- High impact resistance cover glass
- High brightness (1000 cd/m<sup>2</sup>)
- Long backlight lifetime (70K hours)
- 64-bit Cortex-A35 / Cortex-A55 CPU
- Dual display interfaces
- Dual 10/100M/Gb Ethernet (LAN2 optional)
- I/O: USB, RS232/485, GPIO, I<sup>2</sup>C, SPI
- PoE (Power over Ethernet) capable (optional)
- Multi-band LTE/5G module (optional)
- OS: Android, Ubuntu, Debian
- -20°C~70°C operating temperature

**\*\* New Features \*\***  
IK08 compliant  
Cover Glass



## Typical Applications

- ❑ EV Charger
- ❑ Industrial Equipment
- ❑ Smart Home Console
- ❑ Digital Signage
- ❑ POS, KIOSK

Powered by:  
**Linux**



# [ Product Specifications ]

## NSD3500 (Higher performance series)

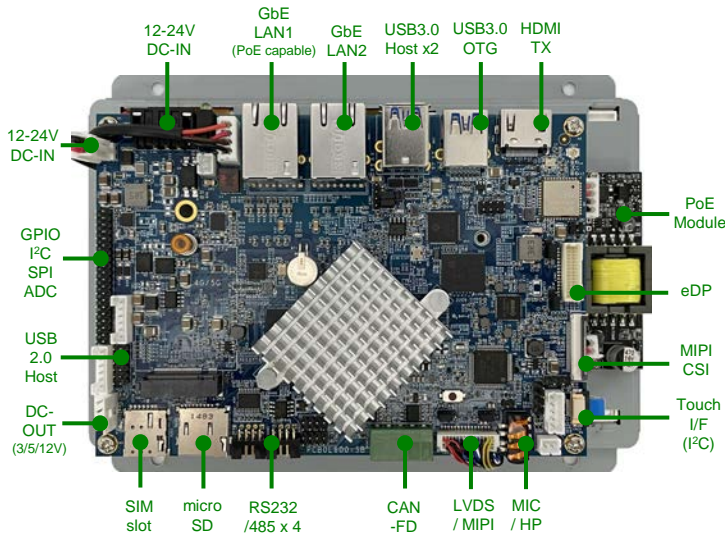
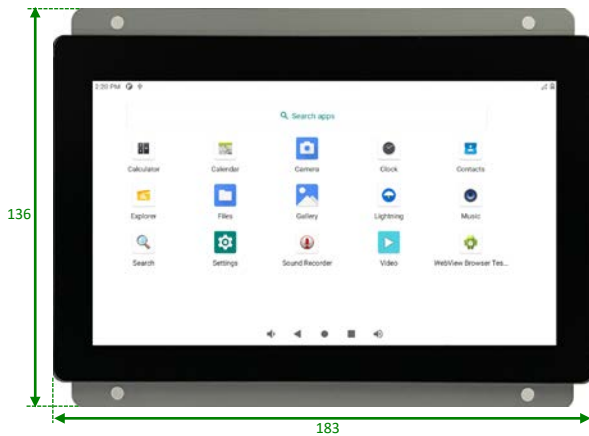
		NSD3510WX -HL	NSD3507WS -HL	NSD3510WX -HL-KK3	NSD3507WS -HL-KK3
Main Display	Screen Size	10.1-inch	7-inch	10.1-inch	7-inch
	Resolution	1280 x 800	1024 x 600	1280 x 800	1024x600
	Active (mm)	217 x 136	154 x 86	217 x 136	154 x 86
	Luminance (cd/m <sup>2</sup> )	1000	1300	1000	1300
	Backlight Lifetime	70K hours	70K hours	70K hours	70K hours
	View Angle (°)	(H) 85/85 (V) 85/85	(H) 85/85 (V) 85/85	(H) 85/85 (V) 85/85	(H) 85/85 (V) 85/85
Touch Screen	Type	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive
	Hardness	7H	7H	>= 8H	>= 8H
	Impact Level	---	---	IK08	IK08
	Others	---	---	High level mechanical impact resistance, bending strength, Hardness	
System	CPU	Rockchip RK3568 (64-bit Quad-core ARM Cortex-A55 @ 2.0Ghz)			
	DDR	LPDDR4X 2GB (or 4GB / 8GB)			
	Flash	eMMC 8GB			
	OS	Android 11.0 (or higher) / Ubuntu 18 (or higher) / Debian			
	NPU	0.8 Tops			
Ethernet	LAN1: Gb Ethernet <b>(option)</b> LAN2: Gb Ethernet				
Display Interfaces	1x HDMI TX (4K) 1x eDP (2K)				
Audio Interface	2x speaker connector + 1x MIC/Earphone connector				
Camera Interface	1x MIPI-CSI RX				
SD Card	1x microSD holder				
PCIe Interface	1x (M.2 3042 M-key) socket (for SSD)				
LTE Interface	(M.2 3042/3052 B-key) LTE/5G + SIM slot				
WiFi / Bluetooth	<b>(option)</b> 802.11ac (WiFi 5) / Bluetooth 5.0				
I/O	CAN bus	<b>(option)</b> 2x CAN2.0			
	USB ports	4x USB3.0 Host + 1x USB3.0 OTG + 5x USB2.0 Host			
	COM Port	2x RS232 (or RS485) + 2x RS232			
	I <sup>2</sup> C / GPIO	1x I <sup>2</sup> C master + 8-bit GPIO			
	SPI	1x SPI			
Real Time Clock (RTC)	Yes				
Watchdog Timer	Yes				
Wake-On-Lan	Yes				
Power	DC Power	12V-24V			
	PoE	<b>(option)</b> external PoE module to LAN1			
Operating Temp.	0°C to 70°C / -20°C to 70°C				
Certifications	CE, FCC				
Dimension (mm)	246x184x50	183x136x51	246x184x51	183x136x52	

## NSD3300 (Lower cost series)

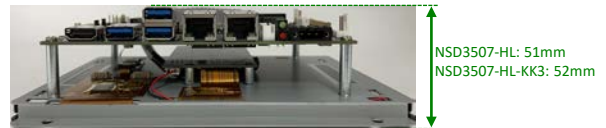
		NSD3310WS	NSD3307WV	NSD3310WX -HL-KK3	NSD3307WS -HL-KK3
Main Display	Screen Size	10.1-inch	7-inch	10.1-inch	7-inch
	Resolution	1024 x 600	800 x 480	1280 x 800	1024x600
	Active (mm)	222 x 125	154 x 86	217 x 136	154 x 86
	Luminance (cd/m <sup>2</sup> )	400	250	1000	1300
	Backlight Lifetime	30K hours	10K hours	70K hours	70K hours
	View Angle (°)	(H) 85/85 (V) 85/85	(H) 70/70 (V) 50/70	(H) 85/85 (V) 85/85	(H) 85/85 (V) 85/85
Touch Screen	Type	Projected Capacitive	Projected Capacitive	Projected Capacitive	Projected Capacitive
	Hardness	6H	6H	>= 8H	>= 8H
	Impact Level	---	---	IK08	IK08
	Others	---	---	High level mechanical impact resistance, bending strength, Hardness	
System	CPU	Rockchip PX30K (64-bit Quad-core ARM Cortex-A35 @ 1.6Ghz)			
	DDR	LPDDR3 2GB			
	Flash	eMMC 8GB			
	OS	Android 11.0 (or higher) / Ubuntu 18 (or higher) / Debian			
	NPU	---			
Ethernet	LAN1: 10/100Mbps Ethernet <b>(option)</b> LAN2: 10/100 Mbps Ethernet				
Display Interfaces	1x TTL-RGB				
Audio Interface	2x speaker connector + 1x MIC/Earphone connector				
Camera Interface	1x MIPI-CSI RX				
SD Card	---				
PCIe Interface	---				
LTE Interface	(mPCIe) LTE socket + SIM slot				
WiFi / Bluetooth	<b>(option)</b> 802.11n (WiFi 4) / Bluetooth 4.1				
I/O	CAN Bus	---			
	USB ports	5x USB2.0 Host + 1x USB2.0 OTG			
	COM Port	2x RS232 (or RS485)			
	I <sup>2</sup> C / GPIO	1x I <sup>2</sup> C master + 8-bit GPIO			
	SPI	---			
Real Time Clock (RTC)	Yes				
Watchdog Timer	Yes				
Wake-On-Lan	---				
Power	DC Power	12V <b>(option)</b> external 9V-36V converter board)			
	PoE	<b>(option)</b> external PoE module to LAN1			
Operating Temp.	0°C to 70°C / -20°C to 70°C				
Certifications	CE, FCC				
Dimension	237x167x50	167x126x45	246x184x54	183x136x54	

# [ NSD3507-HL / NSD3507-HL-KK3 ]

## [ Dimension ] (unit: mm)



		NSD3507WS -HL	NSD3507WS -HL-KK3
Main Display	Screen Size	7-inch	
	Resolution	1024 x 600	
	Active (mm)	154 x 86	
	Luminance	1300 cd/m <sup>2</sup>	
	Backlight Lifetime	70K hours	
	View Angle (°)	(H) 85/85 ; (V) 85/85	
Touch Screen	Type	Projected Capacitive	
	Hardness	7H	>= 8H
	Impact Level	---	IK08
	Others	---	High level mechanical impact resistance, bending strength, Hardness
System	CPU	Rockchip RK3568 (64-bit Quad-core ARM Cortex-A55 @ 2.0Ghz)	
	DDR	LPDDR4X 2GB (or 4GB / 8GB)	
	Flash	eMMC 8GB	
	OS	Android 11.0 (or higher) / Ubuntu 18 (or higher) / Debian	
	NPU	0.8 Tops	
Product Dimension	183x136x51 mm	183x136x52 mm	
More Main Board Interfaces	** refer to [Product Specifications] section		



## [ Ordering Information ]

Part No.	OS	WiFi 5 /BT	KK3 Cover Glass	Common Specifications
NSD3507WS-U-2G-HL	Ubuntu	---	---	7" 1024x600 <b>High Brightness</b> LCD Capacitive touch screen Rockchip RK3568 CPU 2GB LPDDR4X / 8GB eMMC 1x HDMI-TX / 1x eDP / 1x GbE LAN 1x M.2 for LTE / 1x M.2 for SSD / mSD Audio / GPIO / RS232 / RS485 / I2C / SPI USB3.0/2.0 Host / USB3.0 OTG / RTC
NSD3507WS-A-2G-HL	Android	---	---	
NSD3507WS-U-2G-WB-HL	Ubuntu	YES	---	
NSD3507WS-A-2G-WB-HL	Android			
NSD3507WS-U-2G-HL-KK3	Ubuntu	---	YES	
NSD3507WS-A-2G-HL-KK3	Android	---	YES	
NSD3507WS-U-2G-WB-HL-KK3	Ubuntu	YES	YES	
NSD3507WS-A-2G-WB-HL-KK3	Android			

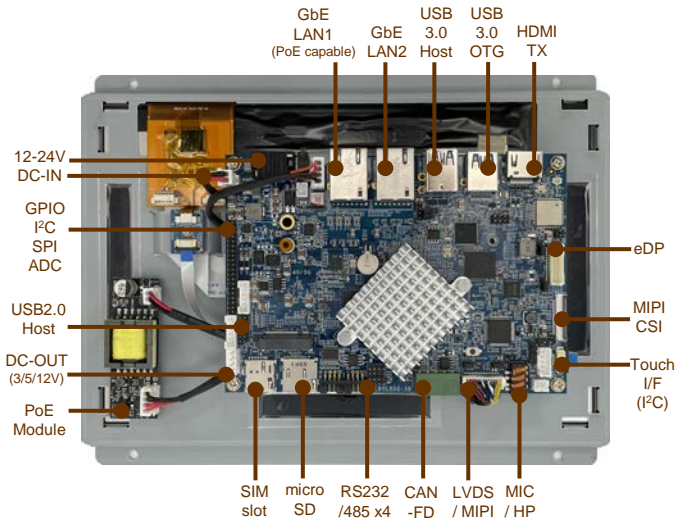
## [ Optional Modules ]

Part No.	Description
PWR-006-VPC	Power Adapter (+12V) + power cord
S76GH-M2	LTE module (M.2 form factor); Global bands

Part No.	Description
POE-GB-B10	GbE Power over Ethernet Module, RT7402D
CAB-15	USB-UART debug/console cable

# [ NSD3510-HL / NSD3510-HL-KK3 ]

## [ Dimension ] (unit: mm)



		NSD3510WX -HL	NSD3510WX -HL-KK3
Main Display	Screen Size	10.1-inch	
	Resolution	1280 x 800	
	Active (mm)	217 x 136	
	Luminance	1000 cd/m <sup>2</sup>	
	Backlight Lifetime	70K hours	
	View Angle (°)	(H) 85/85 ; (V) 85/85	
Touch Screen	Type	Projected Capacitive	
	Hardness	7H	>= 8H
	Impact Level	---	IK08
	Others	---	High level mechanical impact resistance, bending strength, Hardness
System	CPU	Rockchip RK3568 (64-bit Quad-core ARM Cortex-A55 @ 2.0Ghz)	
	DDR	LPDDR4X 2GB (or 4GB / 8GB)	
	Flash	eMMC 8GB	
	OS	Android 11.0 (or higher) / Ubuntu 18 (or higher) / Debian	
	NPU	0.8 Tops	
Product Dimension		246x184x50 mm	246x184x51 mm
More Main Board Interfaces		** refer to [Product Specifications] section	



## [ Ordering Information ]

Part No.	OS	WiFi 5 /BT	KK3 Cover Glass	Common Specifications
NSD3510WX-U-2G-HL	Ubuntu	---	---	10.1" 1280x800 <b>High Brightness</b> LCD Capacitive touch screen Rockchip RK3568 CPU 2GB LPDDR4X / 8GB eMMC 1x HDMI-TX / 1x eDP / 1x GbE LAN 1x M.2 for LTE / 1x M.2 for SSD / mSD Audio / GPIO / RS232 / RS485 / i <sup>2</sup> C / SPI USB3.0/2.0 Host / USB3.0 OTG / RTC
NSD3510WX-A-2G-HL	Android	---	---	
NSD3510WX-U-2G-WB-HL	Ubuntu	YES	---	
NSD3510WX-A-2G-WB-HL	Android			
NSD3510WX-U-2G-HL-KK3	Ubuntu	---	YES	
NSD3510WX-A-2G-HL-KK3	Android	---	YES	
NSD3510WX-U-2G-WB-HL-KK3	Ubuntu	YES	YES	
NSD3510WX-A-2G-WB-HL-KK3	Android			

## [ Optional Modules ]

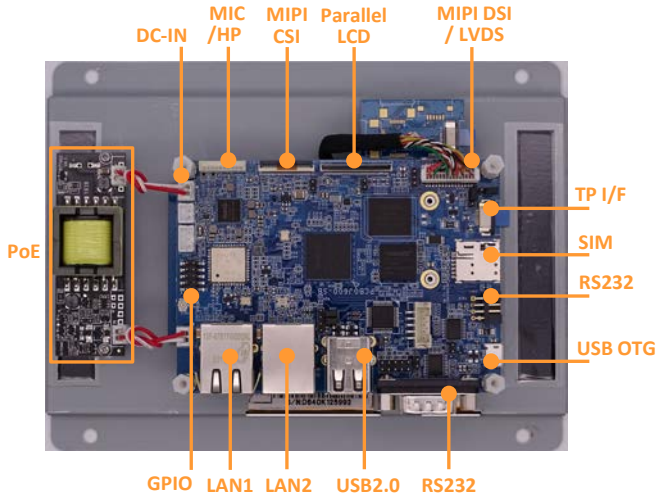
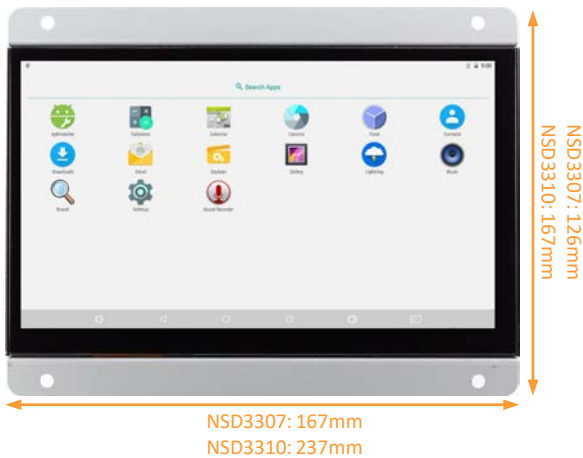
Part No.	Description
PWR-006-VPC	Power Adapter (+12V) + power cord
S76GH-M2	LTE module (M.2 form factor); Global bands

Part No.	Description
POE-GB-B10	GbE Power over Ethernet Module, RT7402D
CAB-15	USB-UART debug/console cable



# [ NSD3307WV / NSD3310WS ]

## [Dimension]



		NSD3307WV	NSD3310WS
Main Display	Screen Size	7-inch	10.1-inch
	Resolution	800 x 480	1024 x 600
	Active (mm)	154 x 86	222 x 125
	Luminance	250	400
	Backlight Lifetime	10K hours	30K hours
	View Angle (°)	(H) 70/70; (V) 50/70	(H) 85/85 ; (V) 85/85
Touch Screen	Type	Projected Capacitive	
	Hardness	6H	
	Impact Level	---	
	Others	---	
System	CPU	Rockchip PX30K (64-bit Quad-core ARM Cortex-A35 @ 1.6Ghz)	
	DDR	LPDDR3 2GB	
	Flash	eMMC 8GB	
	OS	Android 11.0 (or higher) / Ubuntu 18 (or higher) / Debian	
	NPU	---	
Product Dimension (mm)		167x126x45	237x167x50
More Main Board Interfaces		** refer to [Product Specifications] section	



## [ Ordering Information ]

Note: Not all models are available. Contact us for custom requirements.

Part No.	OS	WiFi 4/BT	LAN2	Common Specifications
NSD3307WV-U-2G	Ubuntu	---	---	7" 800x480 LCD / Capacitive touch screen Rockchip PX30K CPU/ 2GB LPDDR3 / 8GB eMMC 1x 10/100Mbps LAN Audio / GPIO/ RS232 / USB Host/USB OTG / RTC
NSD3307WV-A-2G	Android			
NSD3307WV-U-2G-MX	Ubuntu	YES	YES	
NSD3307WV-A-2G-MX	Android			
NSD3310WS-U-2G	Ubuntu	---	---	10.1" 1024x600 LCD / Capacitive touch screen Rockchip PX30K CPU/ 2GB LPDDR3 / 8GB eMMC 1x 10/100Mbps LAN Audio / GPIO/ RS232 / USB Host/USB OTG / RTC
NSD3310WS-A-2G	Android			
NSD3310WS-U-2G-MX	Ubuntu	YES	YES	
NSD3310WS-A-2G-MX	Android			

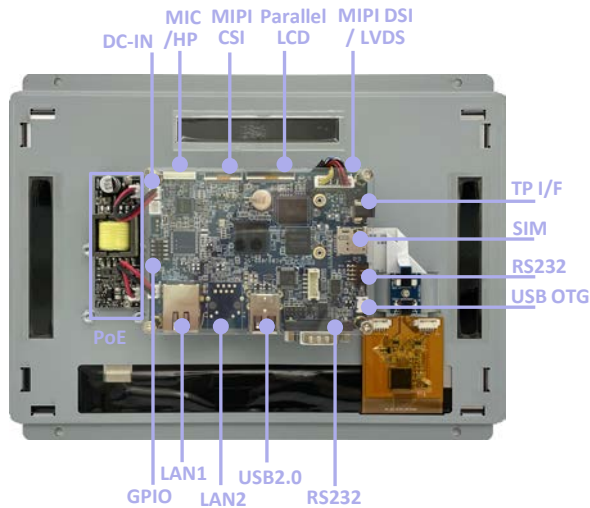
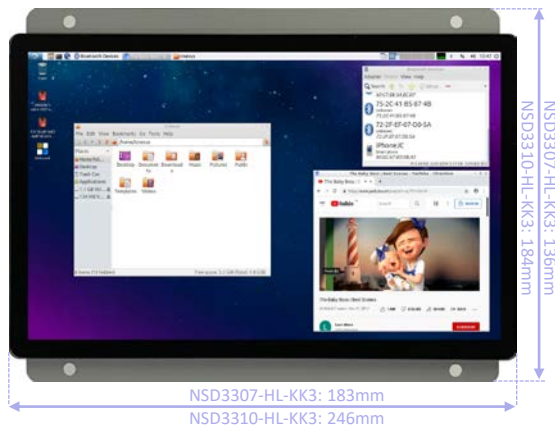
## [ Optional Modules ]

Part No.	Description
PWR-008-SBC33	Power Adapter (+12V) + power cord
K920	9V-36V DC-IN converter board
LTE module	(Contact us for support list)

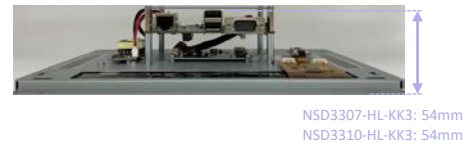
Part No.	Description
POE-MB-A01	10/100M Power Over Ethernet Module
LTE module	(Contact us for support list)
WLS-020	(802.11bgnWiFi+BT4.1)+RF cable + antenna

# [ NSD3307-HL-KK3 / NSD3310-HL-KK3 ]

[ Dimension ] (unit: mm)



		NSD3307WS -HL-KK3	NSD3310WX -HL-KK3
Main Display	Screen Size	7-inch	10.1-inch
	Resolution	1024 x 600	1280 x 800
	Active (mm)	154 x 86	217 x 136
	Luminance	1300 cd/m <sup>2</sup>	1000 cd/m <sup>2</sup>
	Backlight Lifetime	<b>70K hours</b>	<b>70K hours</b>
	View Angle (°)	(H) 85/85 ; (V) 85/85	(H) 85/85 ; (V) 85/85
Touch Screen	Type	Projected Capacitive	
	Hardness	>= 8H	
	Impact Level	IK08	
	Others	High level mechanical impact resistance, bending strength, Hardness	
System	CPU	Rockchip PX30K (64-bit Quad-core ARM Cortex-A35 @ 1.6Ghz)	
	DDR	LPDDR3 2GB	
	Flash	eMMC 8GB	
	OS	Android 11.0 (or higher) / Ubuntu 18 (or higher) / Debian	
	NPU	---	
Product Dimension		183x136x54 mm	246x184x54 mm
More Main Board Interfaces		** refer to [Product Specifications] section	



## [ Ordering Information ]

Part No.	OS	WiFi 4/BT	LAN2	KK3 Cover Glass	Common Specifications
NSD3307WS-U-2G-HL	Ubuntu	---	---	---	<b>7" 1024x600 High Brightness</b> LCD / CTP Rockchip PX30K CPU / 2GB LPDDR3 / 8GB eMMC 1x 10/100Mbps LAN Audio / GPIO / RS232 / USB Host / USB OTG / RTC
NSD3307WS-A-2G-HL	Android	---	---	---	
NSD3307WS-U-2G-MX-HL	Ubuntu	YES	YES	YES	
NSD3307WS-A-2G-MX-HL	Android	YES	YES	YES	
NSD3310WX-U-2G-HL-KK3	Ubuntu	---	---	---	<b>10.1" 1280x800 High Brightness</b> LCD / CTP Rockchip PX30K CPU / 2GB LPDDR3 / 8GB eMMC 1x 10/100Mbps LAN Audio / GPIO / RS232 / USB Host / USB OTG / RTC
NSD3310WX-A-2G-HL-KK3	Android	---	---	---	
NSD3310WX-U-2G-MX-HL-KK3	Ubuntu	YES	YES	YES	
NSD3310WX-A-2G-MX-HL-KK3	Android	YES	YES	YES	

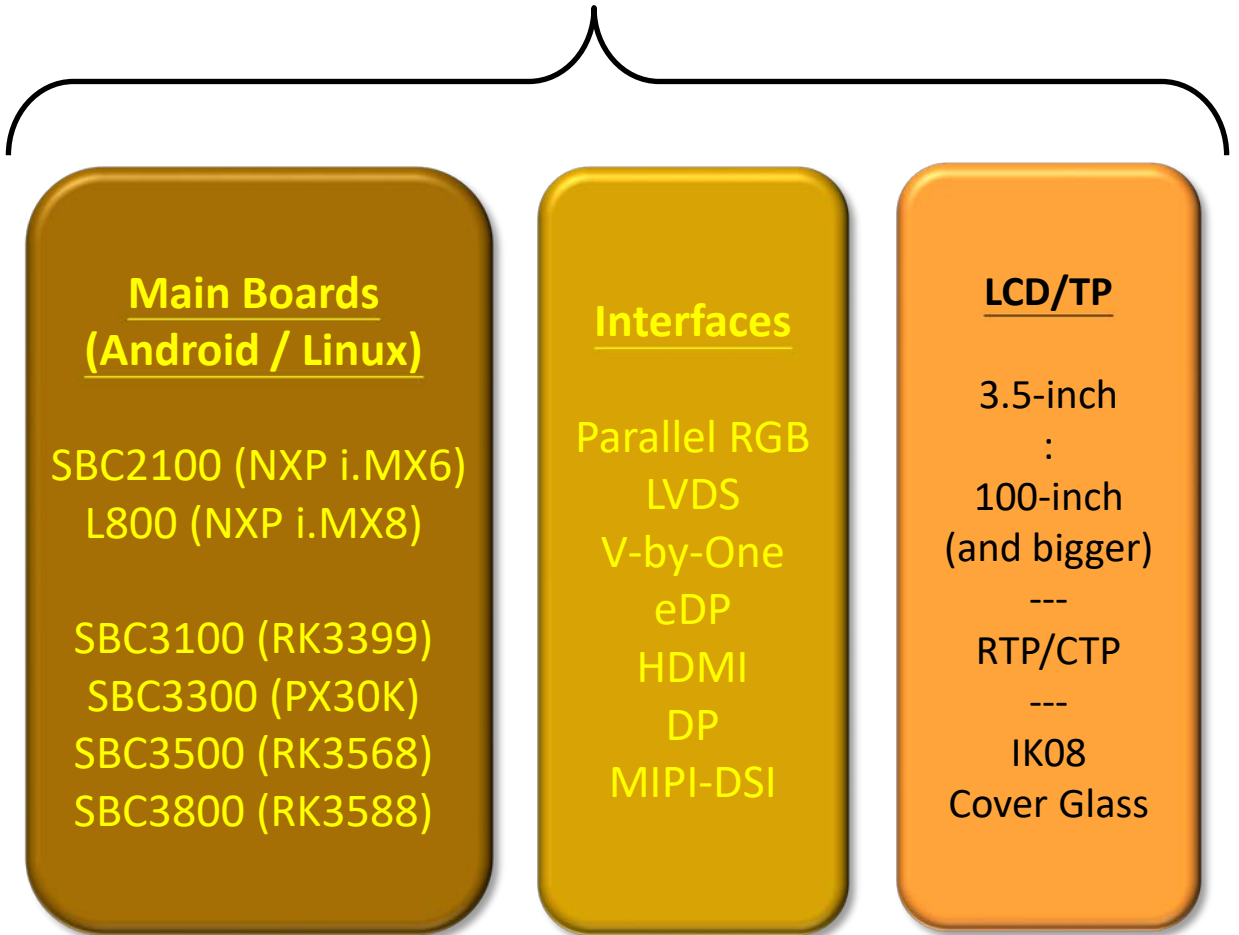
## [ Optional Modules ]

Part No.	Description
PWR-008-SBC33	Power Adapter (+12V) + power cord
K920	9V-36V DC-IN converter board
LTE module	(Contact us for support list)

Part No.	Description
POE-MB-A01	10/100M Power Over Ethernet Module
LTE module	(Contact us for support list)
WLS-020	(802.11bgnWiFi+BT4.1)+RF cable + antenna

# [ Custom Smart Displays ]

We offer software/hardware customized smart displays based on SBC series mainboards and industrial standard LCD / Touch Screen.



Last Update: Oct 2022



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