

NSD Smart Display Datasheet

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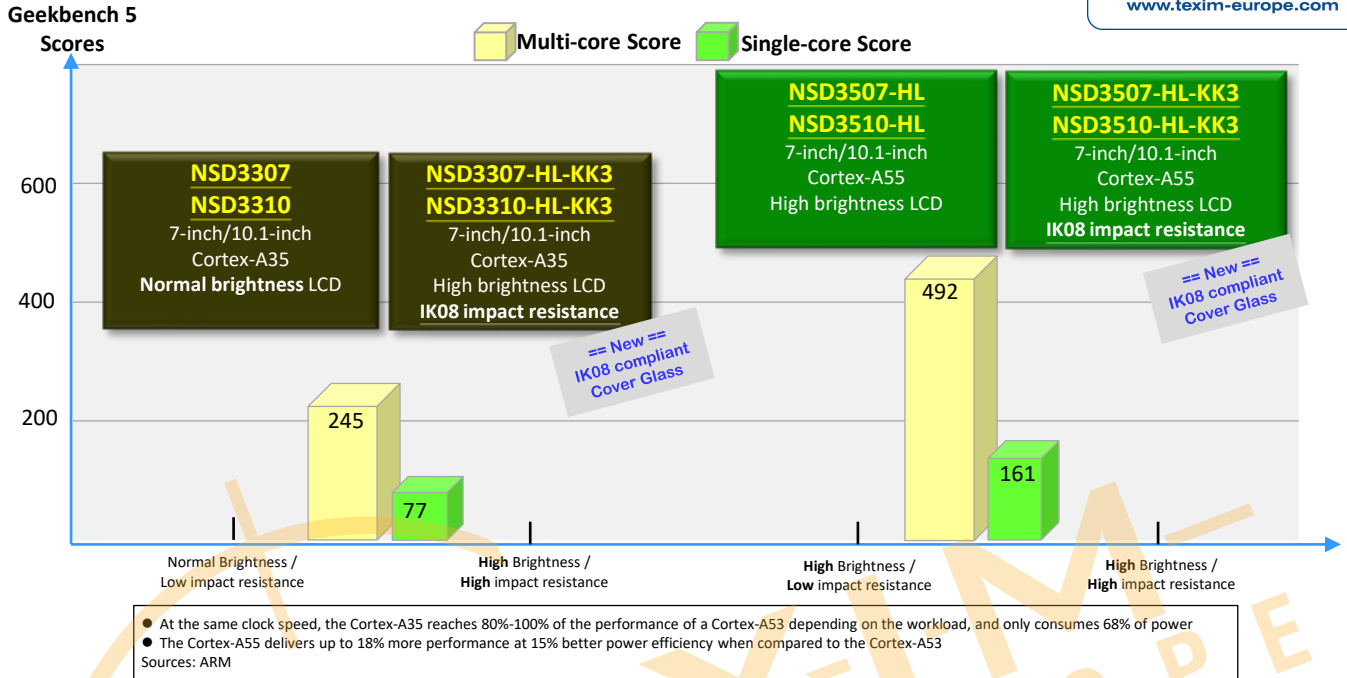
Cost-effective solution for HMI

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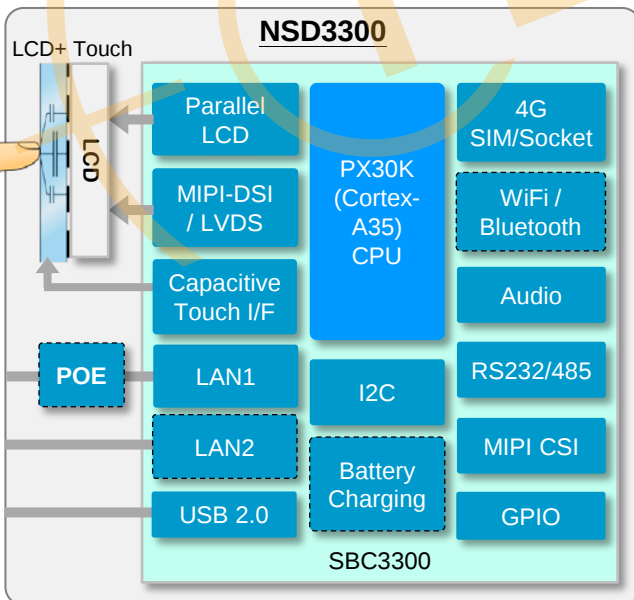


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[Product Models]

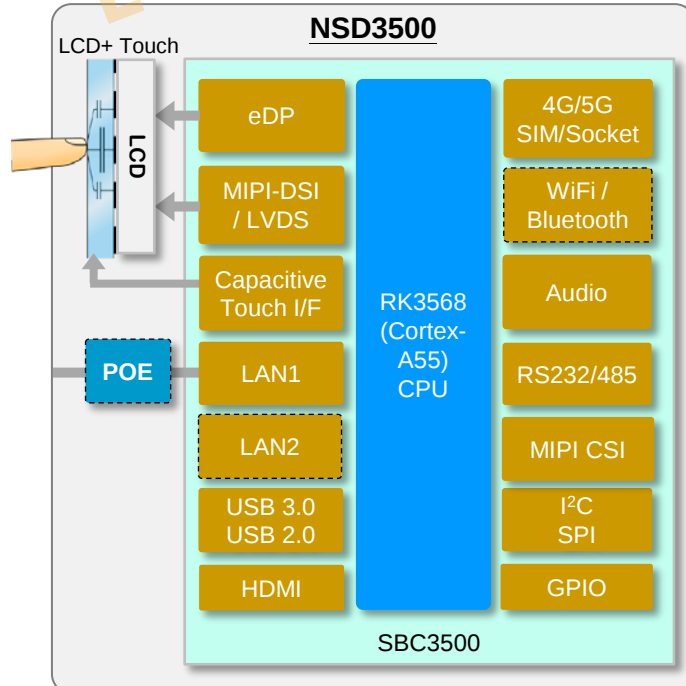


[NSD3300 Block Diagram]



Option functions

[NSD3500 Block Diagram]



Option functions

NSD Smart Display Datasheet

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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/m²)
- 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, I²C, 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/m²)	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 (option) 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		(option) 802.11ac (WiFi 5) / Bluetooth 5.0			
I/O	CAN bus	(option) 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			
	I²C / GPIO	1x I²C 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	(option) 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

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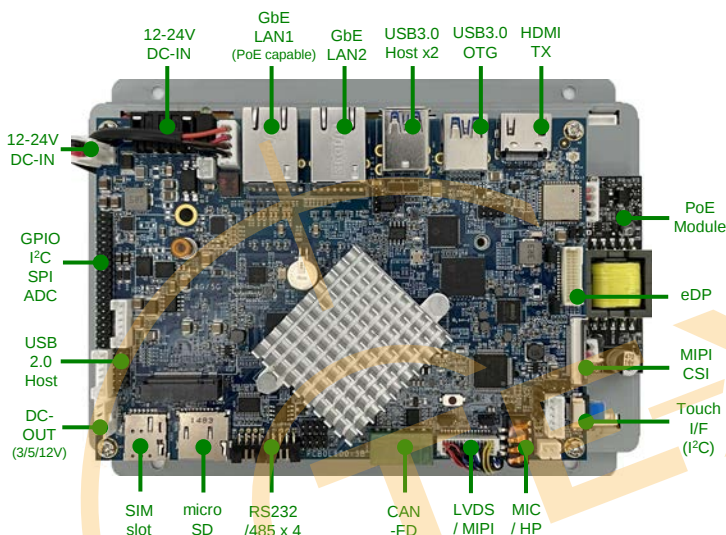
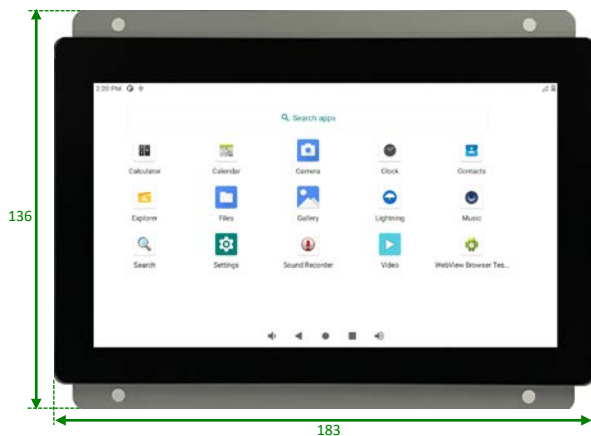
NSD3300 (Lower cost series)

		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/m²)	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 (option) 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		(option) 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)			
	I²C / GPIO	1x I²C master + 8-bit GPIO			
	SPI	---			
Real Time Clock (RTC)		Yes			
Watchdog Timer		Yes			
Wake-On-Lan		---			
Power	DC Power	12V (option external 9V-36V converter board)			
	PoE	(option) 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]

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[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/m²	
	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 High Brightness 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			
NSD3507WS-U-2G-WB-HL-KK3	Ubuntu	YES	YES	
NSD3507WS-A-2G-WB-HL-KK3	Android			

[Optional Modules]

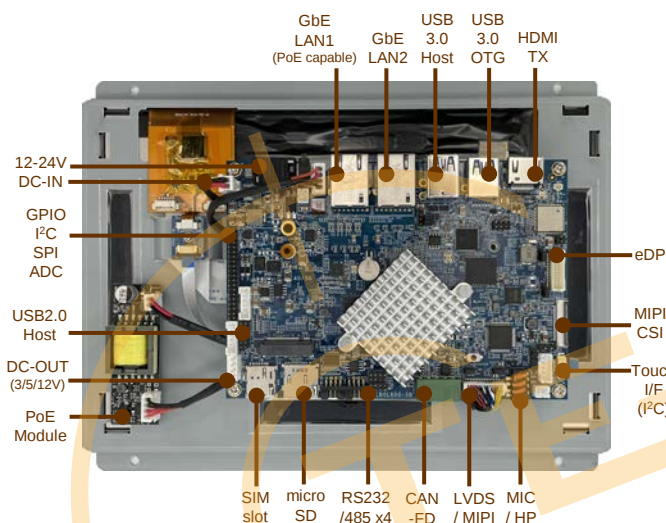
Part No.	Description
PWR-006-VPC	Power Adapter (+12V) + power cord
S76GH-M2	LTE module (M.2 form factor); Global bands

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

[NSD3510-HL / NSD3510-HL-KK3]

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[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/m²	
	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 High Brightness 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
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		YES	

[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

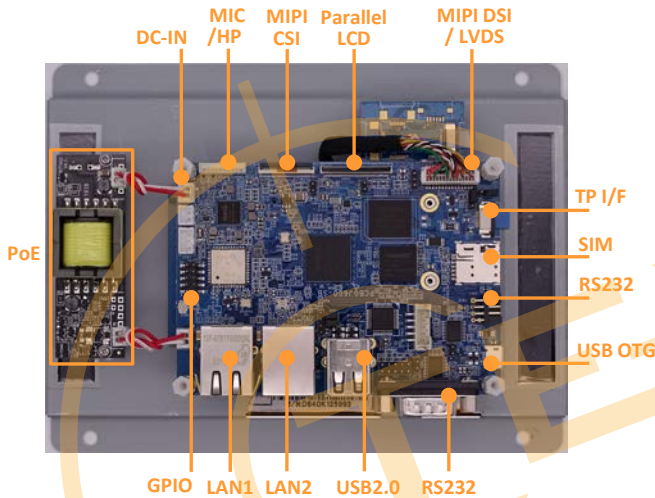
[NSD3307WV / NSD3310WS]

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[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	Audio / GPIO/ RS232 / USB Host/USB OTG / RTC
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	Audio / GPIO/ RS232 / USB Host/USB OTG / RTC
NSD3310WS-A-2G-MX	Android			

[Optional Modules]

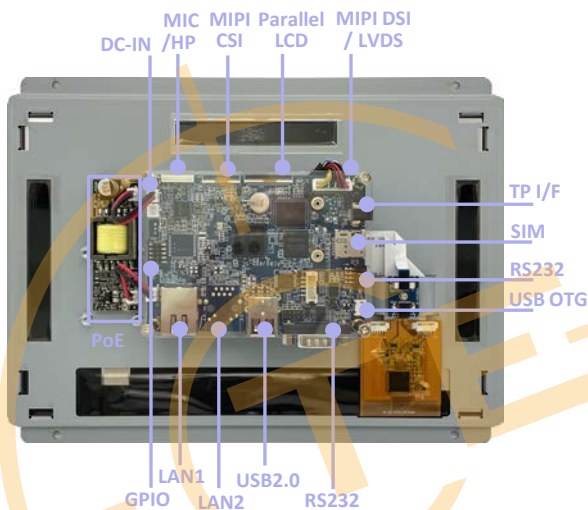
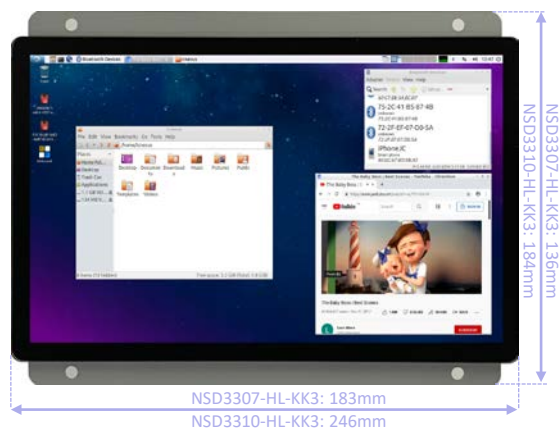
Part No.	Description
PWR-008-SBC33	Power Adapter (+12V) + power cord
K920	9V-36V DC-IN converter board
LTE module	(Contact us for support list)

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

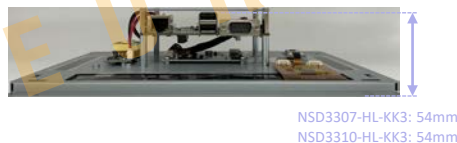
[NSD3307-HL-KK3 / NSD3310-HL-KK3]

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[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 ²	1000 cd/m ²
	Backlight Lifetime	70K hours	70K hours
	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	---	---	---	7" 1024x600 High Brightness 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				
NSD3310WX-U-2G-HL-KK3	Ubuntu	---	---	---	10.1" 1280x800 High Brightness 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				

[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]

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

Main Boards (Android / Linux)

SBC2100 (NXP i.MX6)
L800 (NXP i.MX8)

SBC3100 (RK3399)
SBC3300 (PX30K)
SBC3500 (RK3568)
SBC3800 (RK3588)

Interfaces

Parallel RGB
LVDS
V-by-One
eDP
HDMI
DP
MIPI-DSI

LCD/TP

3.5-inch
:
100-inch
(and bigger)

RTP/CTP

IK08
Cover Glass

Last Update: Oct 2022



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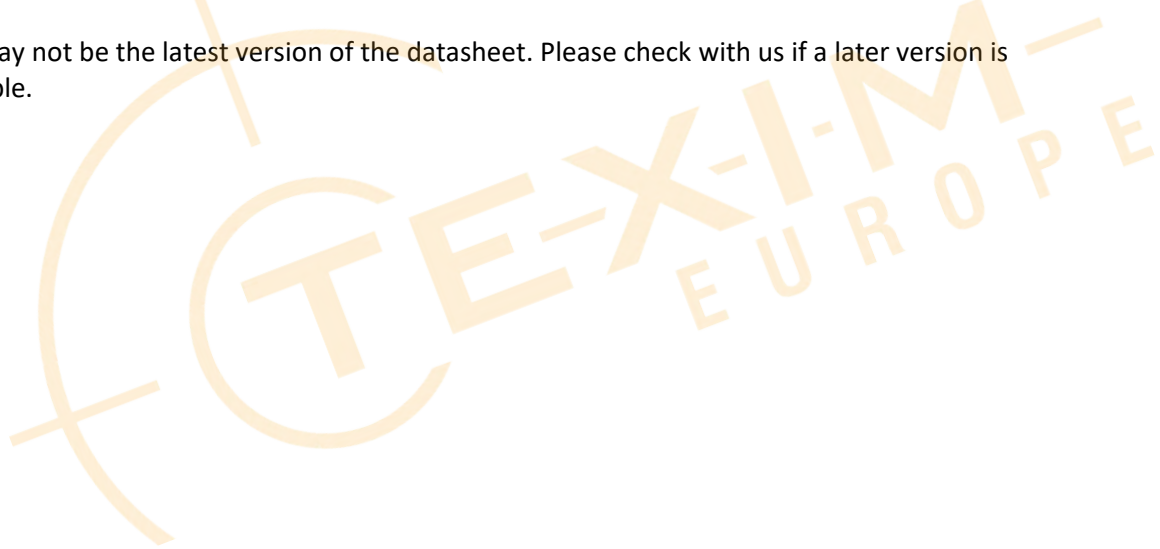
It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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