NephSystem Technologies

Product Catalog

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Company Profile

www.nephsystem.com

About NephSystem Technologies

Nephsystem is the leading supplier in the fields of RFID, Smart Tracking Systems and Industrial PDAs. Nephsystem works with partners a-round the world to ensure that o-ur customers have the right prod-ucts and solutions to achieve their business goals.

We manufacture and distribute a wide variety of industrial embed-ed products, Wireless communica-tion devices and related peripher-als around the world.

NephSystem Technology have pri-marily expertise around three spe-cific technologies:

1) Industrial grade PDAs
2) PDA Peripherals, including Fing-erprint devices, Barcode enable-d and RFID featured devices, etc.
3) Smart tracking systems, e.g. passive or active RFID tracking systems, etc.

We have applied these technologi-es to wide variety of applications all around the world, including, as-set tracking, proof of delivery, inv-entory control and warehouse ma-nagement systems, management of inspections, manufacturing, and Quality Assurance.

Since 2001, we have installed over thousands of our hardware and s-oftware applications throughout North America/Asia/Europe. Working with a network of certified distributors, NephSystem offers world-class industrial networking products to systems i-ntegrators and value-added resellers and direct end-users over 23 countri-es. Clients place great trust in NephSystem's business and valuable produ-cts. NephSystem was established in 2002 and has headquarters in Canada and has offices in the Asian-Pacific region.

Fastest Measurement

Make Testing Mobile

Most Reliable Service

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N260

N260 industrial graded and Ultra Rugged PDA

Overview:

NephSystem N260 industrial graded and Rugged PDA is an ultra-rugged and compact handheld computer terminal with a powerful 800MHz core-based CPU and Microsoft Windows CE 6.0 Operating System. With its highly durable and rugged design, N260 can withstand drops from 1.8 meters (five feet) to polished concrete as well as with its features of dust and water resistant (IP65 rating), N260 creates the most performance and reliability to most applications such as Asset Tracking, Livestock Tracking, Warehousing and Manufacturing, Shop Floor, Healthcare, etc.

The N260 incorporates a 3.5" trans-reflective LCD with touch screen, keypad, Wi-Fi and Bluetooth communication capability. Optional peripherals, such as GPS, GSM Quad-band 850/900/1800/1900MHz, GPRS, EDGE/WCDMA 850/900/1900/2100MHz HSDPA, Low Frequency of 125KHz RFID component, Low Frequency of 134.2KHz HDX and FDX RFID component, High Frequency of 13.56MHz RFID component, 860~960MHz UHF Gen 2 RFID module, 1D/2D barcode, camera is also available. NephSystem N260 and its peripherals are smart handheld devices that boast enhanced wireless communication and data capture functionalities.

Main Features:

- IP65 rated and Ultra-Rugged Design
- High Definition 3.5" TFT LCD
- Windows CE 6.0 based Operating System
- Built-in Wi-Fi (IEEE 802.11a/b/g/n compliant)
- Built-in Blue tooth (2.0)
- Optional high performance 1D/2D Barcode scanner
- Optional GPS
- Optional GSM/GPRS/EDGE/HSDPA
- Optional Colorful 5.0 Mega Pixel Camera
- Optional 125KHz Low Frequency RFID capability
- Optional 134.2KHz ISO/IEC 11784/5 HDX and FDX dual Mode Low Frequency RFID capability
- Optional 13.56MHz High Frequency RFID capability
- Optional 860~960MHz UHF Gen 2 RFID with RSSI capability
- Free SDK provided including .NET (VB/C#) sample codes

Specifications:

Processor	Cortex A8 800MHz	
Operating System	Windows CE 6.0	
Memory	256MB DDR RAM; 4G ROM	
Display	3.5-inch color high definition display	
Wireless	Built-in WLAN 802.11a/b/g/n Built-in Blue tooth class 2.0 Optional GSM /GPRS/CDMA/EDGE/HSDPA Optional GPS	
Optional 125KHz RFID	EM compatible 64 bits, ASK Manchester coding	
Optional 134.2KHz RFID	ISO/IEC 11784/5 FDX and HDX	
Optional 13.56MHz RFID	ISO14443A/B Mifare, Ultralight, ISO 15693, I-code SLI, etc.	
Optional EPC Class 1 Gen 2, ISO18000-6C RFID	Frequency	860~960MHz; Software Adjustable
	Output Power	Max. 30dBm
	Antenna Gain	4dBi
	Antenna Polarization	Circular
	Reading Distance	Up to 8 meters (tags dependent)
Optional 1D/2D Barcode	Honeywell N4313 or Zebra SE965 Barcode scanner	
Audio	Built-in Speaker	
Main Battery	Rechargeable Li-Polymer Smart Battery (3200 mAh)	
IP Rating	IP65 (five feet drop to concrete); Dust/Water resistant	
Dimension & Weight	175*78*27 (mm) / 420g (battery included)	
Environment	Operating Temperature: -20°C to +60°C Storage Temperature: -40°C to +70°C	
Certificates	CE, RoHS, FCC, cUL/UL	

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N280 RFID Barcode Android Rugged Tablet

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Overview:

NephSystem Technologies N280 IP67 rated and industrial grade Android tablet uses quad core 1.2 GHz CPU with internal 2G RAM, 16G Flash memory. It is running at Android 5.1 Operating System and integrates with most of peripherals all together including 125KHz Low Frequency RFID module, 134.2KHz Low Frequency RFID module, 13.56MHz (ISO14443 / ISO15693) High Frequency RFID module, NFC, 3.5mm audio interface, gravity sensor, digital compass, fingerprint identification scanner, vibrating motor, Bluetooth, GPS module, camera, Wi-Fi, 3G/4G/LTE as well as other optional features such as 1D/2D barcode scanner, etc.

N280 Ruggedized tablet computing system also features super long battery life (powered by its internal 7200 mAh battery), drop resistance (up to 1.2 meters on concrete) and sunlight viewable LCD screen. With its internal and powerful UHF Gen-2 860MHz ~ 960MHz RFID engine, it can easily detect any compatible UHF Gen-2 tags from up to 10 meters (about 30 feet) distance at a very high reading throughput. N280 could be widely used in mobile informatization projects of various industries, for example Logistics System Management, Medical Treatment, Digital Warehouse Management, Assets Management, People Tracking, Children Safety and School Bus Tracking Solution, Bus Safety System, and other fields.

Main Features:

- All in one rugged design
- Android Operation system with Quad core 1.2 GHz CPU and 2G RAM
- 7-inch LCD screen, 1280x800 IPS capacitive touch screen
- Built in WIFI, Bluetooth, 4G, LTE, GPS, Camera
- Built in 1D/2D barcode scanner
- Reading distance up to 10 meters w/ UHF Gen 2 RFID tags
- Completely water/Dust proof, IP67 rated drop resistance from 1.2m
- CE/FCC/RoHS Certified
- Free SDK and demo utility

Operation System	Android 5.1
CPU	MSM8916, Cortex A53, 4 core CPU @1.2GHz
Memory	2G RAM, 16G FLASH
Extended Storage	Micro SD, Maximum 32G Supported
Wireless Communication	WIFI, Bluetooth, GPS Module, 4G, LTE
Touch Screen	7-inch sunlight viewable, 1280x800 IPS
Camera	2 million pixels front / 8 million pixels rear
1D/2D Barcode Scanner	Built-in
3G/4G/LTE/Wi-Fi/Bluetooth	Built-in
GPS, Gravity Sensor, Compass, Vibrating Motor	Built-in
125KHz or 134.2KHz Low Frequency RFID	Optional
13.56MHz High Frequency RFID	Optional
860M~960MHz UHF Gen 2 RFID	Optional
Optional Fingerprint Module	Optional
Optional Far infrared Module	Optional
Dimensions / Weight	209mm*139mm*19mm / 600g (with battery)
Rechargeable Lithium Battery	3.7V, 7200mAh
IP Rating	IP67 three protection grade, drop resistance from 1.2m
Humidity	5%RH ~ 95%RH (non-Condensing)
Working / Storage Temperature	-20°C~+50°C / -40°C ~+ 60°C
Certificate	CE/RoHS/FCC/MIL-STE-810G

N310 Bluetooth UHF Gen 2 Reader | Writer

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Overview:

The N310 Bluetooth featured UHF Gen 2 RFID handheld device provides a smart combination of Bluetooth Interfaces and touch-less RFID technology. Dedicated for users who are looking for handheld and wireless devices to integrate the RFID technology into their existing systems. N310 is able to be powered by its internal Li battery or by a desktop/notebook PC via USB connection or any regular 5VDC power supplies. Its built-in Bluetooth capability supports for being wirelessly paired with most of Bluetooth enabled platforms via the wireless Bluetooth interface for data transferring between. N310 is ideal for the mobile workforce to track and monitor mobile assets and is readily integrated with a wide variety of Wireless handheld devices such as Windows Mobile/CE based PDAs, Smart Phones, Android Devices, etc.

Main Features:

- True-color of 1" OLED screen
- Full Read/Write capability for UHF Gen 2 tags
- Compact & Handheld design
- Software selectable of push button or automatic scan
- Keyboard Emulation or Wedge feature on the testing software allows to transfer data between N310 and a host via Bluetooth
- Free SDK is coming with product, including ready-to-use and user-friendly testing software, .NET sample codes, Android SDK, etc.

Specifications:

Communication Interface	Bluetooth 2.0 (or above version) Class 2
Buzzer | Display	Built-in buzzer | True Color 1" OLED Screen
Frequency	Software adjustable 860MHz ~ 960 MHz
Antenna	Built-in 2dBi
Transmit Power	0 ~ 20dBm (Software adjustable)
Transponder Compatibility	EPC UHF Gen 2, EPC C1G2, ISO18000-6C
Reading Distance	Up to 40cm - tags dependent
Scan Mode	Push button and automatic
Housing	ABS
Power Supply	Rechargeable Li battery
Operating | Storage Temperature	-10℃ to 60℃ | -20℃ to 75℃
Size and Weight	Approx. 88mm (L) x 39mm (W) x 16mm (H) | 25g

N330

N330 HF RFID Bluetooth and USB Reader / Writer

Overview:

Being one of the smallest and stand-alone RFID devices in the world, NephSystem N330 Bluetooth enabled HF (13.56MHz) handheld reader/writer provides an ideal combination of contactless 13.56MHz High Frequency RFID, wireless Bluetooth and wired USB interfaces. Its compact design and versatile features offer users the most versatile, flexible and convenient measurement capabilities.

N330's wireless communication and its ideal and versatile compatibilities with 13.56MHz RFID technology make measurement mobilized. It can be widely applied in many RFID application systems such as stock management, traceability system, personnel identification, access control and anti-counterfeit system, etc.

N330's wireless communication and its ideal and versatile compatibilities with 13.56MHz RFID technology make measurement mobilized.

Main Features:

- Compact design
- Versatile compatibility with most Types of 13.56MHz High Frequency RFID protocols
- Wired (USB) and wireless (Bluetooth 2.0) connectivity
- Flexible scan modes, supporting Automatic and Push Button scanning
- High capacity Li-Ion rechargeable Battery
- Ready-to-use testing software for Both of PC and PDA applications
- Keyboard Emulation or Wedge Capability allows transferring data Between the reader and the PC Automatically without additional Programming requirement
- Ultra low power consumption design, over 4 hours continuous tag reading operation and up to 6 days in standby mode
- Free SDK, including .NET C#/VB versions and Android version

Specifications:

Frequency	:	13.56MHz
Reading Distance	:	8cm (Tags dependent)
Communication Interface	:	Wireless Bluetooth 2.0 And USB
RFID Transponder Compatibility	:	ISO 15693, I-code SLI, ISO 18000-3, ISO 14443A/B/C, Mifare, Ultralight, INSIDE PicoTag ™, Sony Felica, KSW VarioSens, NFC, TI, NXP, ST, INFINEON, FUJITSU, etc.
Antenna Connection	:	Built-in
Bluetooth Transmission Distance	:	> 10 M
Reading Time per 32bits	:	< 30mS
Power Consumption	:	100mA@Working Mode; <2mA@ idle
Operating Voltage	:	DC 5V
Bluetooth Standard	:	Bluetooth 2.0, Class Two
Communication Baud Rate	:	9600 bps
Additional communication Interface	:	Mini-USB
Humidity	:	5% to 90% relative
Operating Temperature	:	-10° to 60°C
Dimension	:	110mm(L) x50mm(W) x 5.5mm(H)
Weight	:	15g

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N350 Swing UHF Gen 2 RFID, 1D/2D Barcode Scanner

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Overview:

NephSystem's N350 Swing is a handheld data collection terminal that has built-in 860-960MHz UHF Gen2 RFID engine, it uses Bluetooth (4.0 BLE) to transmit data with any Bluetooth enabled hosts such as a PC, laptop, iPhone, iPad, Android smartphones, Tablets, Apple Mac, etc. The internal RFID engine features superior UHF Gen 2 RFID reading and writing operations (powered by Impinj Indy R2000 chip), fully compliant with ISO 18000-6C/EPC 860MHz ~ 960 MHz UHF C1G2 protocol. Scanned RFID data could be stored onto its large internal memory (up to 50,000 groups of data). It also integrates optional high performance 1D/2D Barcode scanner (Model N350B) making itself a perfect add-on handheld device for Logistics System Management, Medical Treatment, Digital Warehouse Management, Assets Management, inventory management etc.

Main Features:

- All in one rugged design, water / dust proof
- 860MHz ~ 960MHz EPC C1-G2 ISO18000-6C UHF RFID compliant
- Superior UHF RFID reading and writing
- Bluetooth 4.0 BLE communication
- Optional 1D/2D high performance Barcode scanner
- Battery powered
- iPhone/iPad/Android smartphone compatibility
- Internal high capacity memory, stores up to 50,000 tag data
- Free SDK for iOS / Android / Windows

Specifications:

Frequency Range	Global 920-925MHz/902-928MHz/865-868MHz
LED Screen	1.77 inch, 128X160
Antenna	Linear Polarized antenna (4dBi)
RFID Transponder Compatibility	EPC Gen 2 UHF RFID
Connectivity	Bluetooth 4.0, BLE
Reading Distance (Tag Dependent)	>20 meters (indoors);>12 meters (open outdoors)
RF Power	Max 30dBm, software adjustable
Reading Rate	>200tags/s
Barcode Scanner	Optional 1D / 2D Scanner
Data Storage	Up to 50,000 groups
Material	Engineer Plastic
Power	5200mAh 4.35VBattery
Operating Temperature	-20 degrees to 60 degrees
Storage Temperature	-40 degrees to 70 degrees
Humidity	5%RH - 95%RH non condensing
Drop Specification	Multiple 1.5m / 4.9ft drops (at least 20 times) to concrete
ESD	±15KV air discharge, ±8KV conductive discharge
Dimensions	282 x 117.5 x 32mm / 11.10 x 4.63 x 1.26in
Weight	334g / 11.78oz (with battery)

iOS EPCglobal CE FC RoHS 4.0 Bluetooth 1D Barcode 2D Barcode

N360 Bluetooth Plug & Play Reader

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Overview:

N360 UHF EPC Gen 2 or 13.56MHz Bluetooth interfaced RFID device is compliant with ISO 18000-6C/EPC 860MHz ~ 960 MHz UHF C1G2 protocol as well as 13.56MHz NFC/ISO14443A/ISO15693 standards. It integrates Bluetooth 4.0 communication feature and is a perfect add-on device for any Bluetooth enabled host such as Microsoft Windows, Linux, Unix, Windows CE/Mobile, Android smart phones/tablets, iPhone and iPad, etc. It uses Plug Play keyboard emulation technology that might perform just like a regular Keyboard, no requirement for drivers or software. N360 Plug Play RFID scanner is ideal for in-store inventory management, field sales mobility, service and maintenance applications, etc.

With N360's Plug Play pure Keyboard emulation feature, it allows users to immediately transfer tag data over to a Bluetooth device (iPhone, Android phone, etc.) without any additional drivers' installation or programming requirement.

Main Features:

- Watch style design, water / dust proof
- 860MHz ~ 960MHz EPC C1-G2 ISO18000-6C or 13.56MHz standard compliant
- Bluetooth 4.0 communication
- Battery powered
- Pure iPhone/iPad/Android smartphone compatibility
- Plug & Play keyboard emulation feature

Specifications:

Frequency Range	860 to 960MHz (ETSI or FCC part 15) - Model. N360-U; 13.56MHz, ISO18000-3 – Model. N360-HF;
Antenna	Integrated
RFID Transponder Compatibility	EPC Gen 2 UHF RFID - N360-U; 13.56MHz ISO14443A and ISO15693 - N360-HF;
Connectivity	Bluetooth 4.0 and USB
Human Interface Device (HID) profile available	Yes
Reading Distance	50cm for N360-U; 5-10cm for N360-HF;
Reader Indicators	LED and Buzzer
Material	ABS+PC engineer plastic
Operating Temperature	-20 degrees to 65 degrees
Storage Temperature	-25 degrees to 85 degrees

N370 RF-Racket RFID Reader Writer

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Overview:

NephSystem's N370 RF-Racket Bluetooth and USB interfaced RFID device is compliant with ISO 18000-6C/EPC 860MHz ~ 960 MHz UHF C1G2 protocol (Model: N370UHF) as well as 13.56MHz ISO15693 standard (Model: N370HF). It integrates Bluetooth 4.0 communication feature and is a perfect add-on device for any Bluetooth enabled host such as a PC, iPhone, iPad, Android smartphones, etc.

The N370 can also operate in buffer mode, allowing to store tags data into its internal memory (up to 45,000 tags) when the communication links are not available and allowing users to upload data to a host later on. With N370's Bluetooth HID version and pure Keyboard emulation feature (Model: N370 UHF-HID or N370 HF-HID), it allows users to immediately transfer tag data over to a Bluetooth device (iPhone, Android phone, etc.) without any additional drivers' installation or programming requirement.

And N370 also provides capability that allows users to develop their own software applications for full tag operations such as reading tag user memory, writing data onto tags, etc. (Model: N370 UHF-B or N370 HF-B).

Main Features:

- All in one rugged design
- EPC C1-G2 ISO18000-6C 860MHz ~ 960MHz UHF compliant
- 13.56MHz ISO15693 I-code compliant
- Bluetooth 4.0 communication
- Battery powered
- Pure iPhone/iPad/Android smartphone compatibility
- Plug & Play keyboard emulation version (N370 UHF-HID or N370 HF-HID)
- Internal high capacity memory, stores up to 45,000 tag data

Specifications:

Frequency Range	860 to 960MHz (ETSI or FCC part 15) - Model. N370 UHF; 13.56MHz, ISO18000-3 – Model. N370 HF;
Antenna	Integrated
RFID Transponder Compatibility	EPC Gen 2 UHF RFID – Model. Model. N370 UHF; 13.56MHz ISO15693 - Model. N370 HF;
Connectivity	Bluetooth 4.0 and USB
Human Interface Device (HID) profile available	For Model. N370 UHF-HID or N370 HF-HID
Reading Distance	Up to 4 meters (12 feet) for N370 UHF; Up to 40cm for N370 HF;
Reader Indicators	LED and Buzzer
Operating Temperature	-20 degrees to 65 degrees
Storage Temperature	-25 degrees to 85 degrees
Dimension	50 x 13.5 x 3.5 cm
Weight	370g

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N380 Multiple Frequencies HID|SPP RFID Reader | Writer

Overview:

Being one of the smallest and cost effective, stand-alone RFID devices in the world, NephSystem's N380 Multiple Frequencies RFID reader/writer uses Plug & Play USB HID (Human Interface Device) or SPP (Serial Port Profile) technology to get RFID tag data into any Windows™/ Mac / Linux / Unix or even Android O.S. based application. N380 has the minimum power requirements through using the power directly from the USB port with no other connection required.

N380 series products may support reading or writing multiple frequencies tags, such as:

- 13.56MHz ISO/IEC 15683 (Model No. N380-HF)
- 13.56MHz ISO 14443A/B (Model No. N380-HF)
- 13.56MHz ICODE, TI, NXP, ST, INFINEON or FUJITSU (Model No. N380-HF)
- 860MHz ~ 960MHz ISO18000-6C EPC Gen 2 (Model No. N380-UHF)

By using the N380HID version, users just need to plug the N380 into an open USB port on the PC's host, the N380 will be identified as a Human Interface Device (HID) and ready to scan RFID tags, the tag's data (e.g. "EPC" or "UID") will be inserted into any desired applications such as Excel™, Word™, database, or other application where you want your tag data to be placed. This Plug & Play feature does NOT require any drivers or software to be installed or pre-loaded and allows users to immediately and easily integrate N380 into their own systems.

N380 also provides the capability of programming via Serial Port Profile or Virtual Com Port (Model: N380B) that allow users to develop their own software application based on the full SDK we provide. Its compact design and ready-to-use Plug & Play feature offer users the most versatile, flexible and convenient measurement capabilities.

Main Features:

- Pocket sized design and cost effective
- HID and Plug & Play technology (For N380HID)
- Keyboard Emulation or Wedge capability allows to transfer data between the reader and the PC automatically without any drivers or additional programming requirement
- Windows 2000/2003/XP/Vista/Windows 7/8 (32/64bit), Mac, Linux, Unix, Android Supported
- Free SDK provided including .NET (VB/C#) sample codes (For N380B).
- Built-in LED and Buzzer
- Built-in Omni antenna design offering the read distance of up to 25cm

Specifications:

Frequency	:	Global 860MHz ~ 960MHz or 13.56MHz
Reading Distance	:	Max. 25cm (Tags dependent)
Communication Interface	:	USB
RFID Transponder Compatibility	:	ISO18000-6C, EPC Gen 2, ISO15693, ISO14443A/B
Antenna Connection	:	Built-in
Status Indication	:	Buzzer and LED
Humidity	:	5% to 90% relative
Operating Temperature	:	-20° to 65°C
Storage Temperature	:	-25° to 85°C
Dimension	:	105mm x 70mm x 11mm
Weight	:	80g
Housing	:	ABS

NephSystem N390 iRF Pixie UHF Gen 2 RFID Dongle

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Overview:

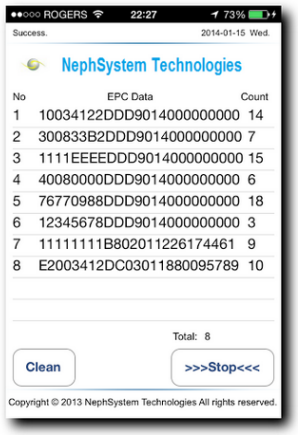
NephSystem Technologies' N390 iRF Pixie RFID Dongle instantly converts iPhone, iPod, iPad or Android based device (Smart Phones / Tablets, etc.) into an EPC Class 1 Gen2 RFID Reader/Writer with full access of ISO 18000-6C UHF EPC Gen 2 standard/protocol including tag reading, writing, etc.

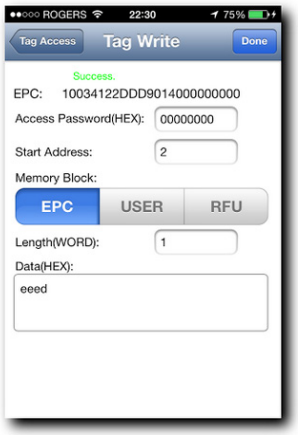
N390 iRF Pixie brings the power of UHF Gen 2 RFID to iOS and Android devices (e.g. iPhone/iPad/iPod/Android Smart Phones, etc.), with the features of lightweight, low cost, low power consumption. N390 could be used in many scenarios where RFID technologies are needed, including the Supply Chain, Warehouse Management, Access Control, Asset Tracking, People Identification, etc.

N390 iRF Pixie uses standard 3.5mm Audio port on iPhone/iPod/iPad or Android based device as the primary communication interface between. It is truly an Plug Play device and NO required to connect any other cables or adapters to make it work.

Main Features of N390 iRF Pixie:

- Compact design
- Built-in Re-chargeable Li battery
- Ultra-low power consumption
- May work for up to 6-8 hours per full charge through Micro USB
- Up to 30cm reading distance with regular EPC Gen 2 tags
- SDK (iOS/Android) available, including FREE Demo utility for iOS and Android devices.





Specifications:

Size	48 mm * 42 mm * 15 mm
Weight	40g
Communication Interface	Regular 3.5 mm Audio Interface
Reading distance	Up to 30cm (tags dependent).
Air-Interface Protocols	EPC C1 GEN2/ ISO 18000-6C
Frequency	Global: 860MHz~960MHz
Antenna Compatibility	Internal, Built-in
Antenna Connection	Non-required
Power Supply	Built-in Re-chargeable Li battery
Housing	ABS

CE FC RoHS

iOS ANDROID EPCglobal UHF Gen2 RFID

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N620 UHF Integrated Reader/Writer with Built-in Antenna

Overview:

The EPCglobal™-certified NephSystem Technologies N620 long range and high performance Integrated reader is a stationary, UHF Gen 2 RFID reader/writer that operates at the global 860MHz ~ 960MHz frequency bands, it has most kinds of interfaces built in, such as RS232 serial, RS485, TCP/IP Ethernet port as well as Wieland 26/34. The optional 802.11 b/g Wi-Fi or POE (Power over Ethernet) is also available. With its powerful Impinj R2000 RFID engine and the excellent anti- collision performance, it fully supports EPC CLASS1 G2, ISO18000-6B protocol tags. N620 UHF integrated Reader can be widely applied and deployed in many RFID related application fields such as Logistics, Access Control, Anti-counterfeit and Industrial Production Process Control System, etc.

Main Features:

- 860~960MHz global frequency band (frequency could be adjusted through software)
- Based on impinj R2000 core design as well as integrated high performance 9dBi antenna, excellent performance in terms of reading range, multi-tag detection as well as awesome anti-collision feature
- RF output power up to 30dbm (software adjustable)
- Built-in high performance 9dbi circular type antenna, one additional TNC type of antenna port is available on board
- Wide power input ranges from 9V till 24VDC, POE (Power over Ethernet) is optional
- Support RS232, RS485, Wiegand 26/34, TCP/IP communication interfaces, optional Wi-Fi feature is available
- Optional two channels of dry-contact relays
- IP67 rated and Ultra rugged design, ideal for any outdoor applications in harsh environment

Specifications:

Frequency	Global 860MHz ~ 960MHz (Software Adjustable)
Communication Interface	Built-in Ethernet and RS-232 and RS485 and Wiegand 26/34; PoE or Wi-Fi is optional
RFID Transponder Compatibility	ISO18000-6C, EPC Class 1 Gen 2; ISO18000-6B, EPC Class 1 Gen 1;
Technical Certificates	ETSI, CE, RoHS, FCC/EPC Gen2 Certification, ISO/IEC 18000-6C, ISO18000-6B
I/O Capability	1 x External indicator control port and optional 2 x dry-contact relay channels
Antenna Connection	One-built 9dBi antenna and one additional antenna port
Power requirements	External DC9V~24V Power supply or optional PoE
Status Indication	Buzzer and LED
Transmit Power	0 to 30dBm (Software Adjustable)
Humidity	5% to 90% relative
Operating Temperature	-10° to 60°C
Storage Temperature	-20° to 75°C
Environmental Sealing	IP67
Dimension	298mm x 298mm x 105mm
Weight	2800g

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NephSystem N680 UHF Gen 2 long range 4-Port Reader/Writer

Overview:

The EPCglobal™-certified NephSystem Technologies N680 long range 4-Port reader is a stationary, UHF Gen 2 RFID tag reader and writer that operates at the global 860MHz ~ 960MHz frequency bands, it provides network (RJ45 or Wi-Fi) and serial (RS-232) and USB2.0 connectivity between tag data and enterprise system software. With its powerful Impinj R2000 RFID engine, the software adjustable power output ability as well as the capability of integrating with up to 4 antennas, N680 is able to support fast tag read/write operation with high identification rate.

Based on an embedded hardware architecture and its high-performance RFID engine, the built-in and versatile peripherals (e.g. relay channel, etc.) As well as the internal precise clocking system, N680 can be set as a standalone device that is able to work independently/automatically to scan RFID tags, trigger relay channels, etc.

Besides regular Command Mode that responds to a host controller through API, N680 can be also configured to the Automatic Mode so that it is able to automatically output tag data over to its serial port (or through the TCP/IP network) without being controlled from a host PC, thus significantly reducing the software development workload and nearly being a plug & play device.

As a result of all the above, N680 allows solution providers to customize the reader to each application, such as Personnel Tracking/Monitoring, Warehouse Management, High Value Asset Tracking, Hospital, Schools, Vehicle/Train Tracking, Parking Management, Manufacturing, Shop Floor, Toll, etc. As well as it offers users the most versatile, flexible and convenient measurement capabilities.

Main Features

- 4 antenna port design
- Built-in Ethernet and RS232 and USB2.0 optional PoE and Wi-Fi
- Precise internal clocking
- Versatile GPIO and dry-contact relay capability
- Global regions supported - FCC, ETSI and other
- Software adjustable Power output
- On-board memory (store up to 800 tag data)
- High speed data throughput
- Software changeable command or automatic mode
- Built-in LED and Buzzer
- Compatible with ISO18000-6B EPC Class 1 Gen 1 and ISO18000-6C EPC Class 1 Gen 2

Specifications:

Frequency	Global 860MHz ~ 960MHz (Software Adjustable)
Communication Interface	Built-in Ethernet and RS-232 and USB2.0; optional PoE or Wi-Fi is available
RFID Transponder Compatibility	ISO18000-6C EPC Gen 2 | ISO18000-6B EPC Gen 1
Technical Certificates	ETSI, CE, RoHS, FCC/EPC Gen2 Certification, ISO/IEC; 18000-6C, ISO/IEC 18000-6B
I/O Capability	4 x GPIO and 1 x dry-contact relay channel
Power requirements	External DC9V Power supply Or optional PoE
Antenna Connection	Max 4 antenna ports (TNC Female)
Transmit Power	0 to 30dBm (Software Adjustable)
Status Indication	Buzzer and LED
Humidity	5% to 90% relative
Operating Temperature	-10° to 60°C
Storage Temperature	-20° to 75°C
Dimension	310mm (L)* 210mm (W) * 41mm (H)
Weight	1880g
Housing	Aluminum

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NSAR-800 Ultra Long Range Active RFID Reader/Writer

NSAR-800 Gain Adjustable and Ultra Rugged Active RFID Reader/Writer

Overview:

NephSystem Technologies' NSAR-800 Ultra Rugged (IP67 rating) and ultra-long range active RFID reader/writer operates in global and open radio frequency band of 2.45GHz. NSAR-800 uses a built in Omni-directional antenna allowing it to identify NephSystem's NSAT series of regular active tags up to 180 meters (600 feet). The reading range of the reader can also be adjusted by software to ensure reliable identification. With NephSystem's heavy duty active tags (model: NSAT-704), the reading distance could be up to 1500 meters (4900 feet) in an outdoor environment. NSAR-800 is also capable of writing up to 512 bytes of user data onto specific NSAT tags (Model: NSAT-701C and NSAT-706).

By using advanced 0.13um CMOS IC technology, NSAR-800 features with high-recognition, ultra-long reading range, ultra-low power consumption, high- reliability & expandability, etc. With its ultra-rugged/compact design (IP67 rating), NSAR-800 is ideal for deployment in a wide variety of indoor and outdoor applications, such as Personnel Tracking/Monitoring, Warehouse Management, High Value Asset Tracking, Hospital, Schools, Vehicle/Train Tracking, Parking Management, Manufacturing, Shop Floor, Toll, etc.

NSAR-800 is also equipped with built-in and software controllable digital dry-contact relay channels, capable of controlling other peripherals such as gates, sirens, garage doors, etc.

NSAR-800 main features of ultra-rugged, water and dust proof capabilities make it easy to be expanded for most of rugged applications. NephSystem's NSAR-800 2.45GHz active RFID reader is one of the toughest and longest ranges of RFID devices on the market.

Main Features:

- Ultra-Rugged and seamless design (IP67 graded)
- Super long reading distance
- Gain adjustable through software (0~1500 meters adjustable)
- Built-in antenna design (No additional/external antenna required)
- Software controllable digital I/O
- Built-in Ethernet (TCP/IP) and RS232 Interfaces
- High speed data throughput (Up to 200 simultaneous tag detection)
- Water/Dust proof, reference to relevant Military standards
- CE/FCC/RoHS Certified
- Free SDK and demo utility

Specifications:

Operating Frequency	2.400-2.4835GHz
Modulation	GFSK
Sensitivity	-95dBm
Communication Rate	1Mbps
Communication Interfaces	1 × RS-232 port and 1 × 10/100M Ethernet (RJ45) port
I/O Capability	Built-in software controllable relay channel
Reading Range	software adjustable 0 ~ 1500m (tags dependent)
Multi-Detection	Up to 200 tags per second
Identification Accuracy	>99.99%
Beep Control	Built-in software controllable buzzer
Water/Dust proof	IP67 rating
Power Consumption	300mW
Power Supply	Global 110V~240VAC input
Power Isolation	1kV
Dimensions	Φ 33cm ×12cm (Φ13.0 inches × 5.0 inches)
Weight	1.5kg (3.3 pounds)
Operating Temperature	-40°C ~ +70°C (-40°F ~ 158°F)
Storage Temperature	-40°C ~ +80°C (-40°F ~ 176°F)
Humidity	5% ~ 95% (non-condensing)
Certificates	CE/FCC/RoHS

NSAR-810 Active RFID Android Rugged Tablet

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Overview:

NephSystem Technologies NSAR-810 IP67 rated and industrial grade tablet uses quad core 1.2 GHz CPU with internal 2G RAM, 16G Flash memory. It is running at Android 5.1 Operating System and integrates with most of peripherals all together including 2.45GHz active RFID module, 3.5mm audio interface, gravity sensor, digital compass, fingerprint identification scanner, vibrating motor, Bluetooth, GPS module, camera, Wi-Fi, 3G/4G/LTE as well as other optional features such as 1D/2D barcode scanner, etc.

NSAR-810 tablet computing system also features long battery life, drop resistance (up to 1.2 meters on concrete) and sunlight viewable LCD screen. With its internal and powerful NephSystem NSAR 2.45GHz active RFID engine, it can easily detect any NephSystem NSAT series active tags from up to 50 meters distance at a very high reading throughput (up to 200 simultaneous tag detections per second). NSAR-810 could be widely used in mobile informatization projects of various industries, for example Logistics System Management, Medical Treatment, Digital Warehouse Management, Assets Management, People Tracking, Children Safety and School Bus Tracking Solution, Bus Safety System, and other fields.

Main Features:

- All in one rugged design
- Android Operation system with Quad core 1.2 GHz CPU and 2G RAM
- 7-inch LCD screen, 1280x800 IPS capacitive touch screen
- Built in WIFI, Bluetooth, 4G, LTE, GPS, Camera
- Optional 1D/2D barcode scanner
- Reading distance up to 50 meters with NSAT series active tags
- Completely water/Dust proof, IP67 rated drop resistance from 1.2m
- CE/FCC/RoHS Certified
- Free SDK and demo utility

Specifications:

Operation System	Android 5.1
Wireless Communication	WIFI, Bluetooth, GPS Module, 4G, LTE
Touch Screen	7-inch sunlight viewable, 1280x800 IPS capacitive LCD touch screen
1D/2D Barcode Scanner	Optional
Other I/O Interfaces	OTG (Could be used for U-disk/Mouse/Keyboard/USB Ethernet cable/ extend RS232 serial port); 3.5mm headphone Port, Charging Port
RFID Operating Frequency	2.4-2.5Ghz frequency band
Tag Reading Range	Up to 50 Meters with NSAT series active tags
Reading Range Adjustment	Yes, through the software
RFID tag Writing Capability	Yes, with special writable NSAT tags
IP Rating	IP67 three protection grade, drop resistance from 1.2m
Dimensions	209mm*139mm*19mm
Weight	600g (with battery)

NephSystem NSAR-850 Rugged Active RFID Reader/Writer

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Overview:

NephSystem Technologies' NSAR-850 Industrial and Rugged (IP55 rating) and long-range active RFID reader/writer operates in global and open radio frequency band of 2.45GHz. It uses a built in Omni-directional antenna allowing it to identify NephSystem's NSAT series of regular active tags up to 100 meters. The reading range of the reader can also be adjusted by software to ensure reliable identification. NSAR-850 is also capable of writing up to 512 bytes of user data onto specific NSAT tags (Model: NSAT-701C and NSAT-706).

NSAR-850 has the built-in full function Ethernet port as well as the RS232 serial port. It is also equipped with built-in and software controllable digital dry-contact relay channels, capable of controlling other peripherals such as gates, sirens, garage doors, etc. In addition, optional wireless Wi-Fi 802.11b/g or Wiegand 26/34 interface(s) are also available upon specific requirement from different applications.

NSAR-850 main features of compact and modular design, rugged, water and dust proof capabilities make it easy to be expanded for most of applications and make it possible to provide an economical and ideal solution to a wide variety of active RFID applications.

Main Features:

- Rugged and compact design
- Long reading distance up to 100 meters
- Gain adjustable through software
- Software controllable dry-contact relay channels
- Built-in Ethernet (TCP/IP) and RS232 interfaces
- Optional wireless Wi-Fi 802.11 b/g or Wiegand 26/34 interfaces
- High speed data throughput (up to 200 simultaneous tag detection)
- Water/Dust proof, IP55 rated
- Free SDK and demo utility

Specifications:

Operating Frequency	2.400-2.4835GHz
Sensitivity	-95dBm
Communication Interfaces	1 × RS-232 port and 1 × 10/100M Ethernet (RJ45) port; Optional Wi-Fi 802.11 b/g or Wiegand 26/34
I/O Capability	Built-in software controllable relay channel
Reading Range	Software adjustable 0 ~ 100m
Multi-Detection	Up to 200 tags per second
Identification Accuracy	>99.99%
Beep Control	Built-in software controllable buzzer
Water/Dust proof	IP55 rating
Power Consumption	300mW
Power Supply	DC5.0V
Dimensions	190mm x 120mm x 40mm (L x W x H)
Weight	0.5kg
Operating / Storage Temperature	-40°C ~ +65°C (-40°F ~ 158°F) / -40°C ~ +80°C (-40°F ~ 176°F)
Humidity	5% ~ 95% (non-condensing)
Certificates	CE/FCC/RoHS

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NSAT Series Active RFID Tags

Overview:

The NephSystem Technologies' NSAT Series of 2.45GHz Active RFID heavy duty tags are active tags that continuously transmit unique ID numbers, which can be detected and decoded by NephSystem's NSAR series of active readers. They use advanced 0.13um CMOS IC technology and provide ultra-low power consumption, ensures longer battery life (up to 6 years) at higher rates of transmission. The NSAT tags' unique anti-collision feature allows for a simultaneous read of up to 200 tags and up to 1500 meters (Model: NSAT-704) reading distance. The NSAT tags use industrial PVC housing that allows them to work under any harsh environment (IP50 or IP67 rated). NSAT Series tags are ideally suitable for varied appellations such as Valuable Asset Tracking, Security Management, Security or Personnel Tracking, Shop Floor, Automotive Tracking and Security, Military Asset Tracking, Cargo and Container Tracking, Transportation and Logistics, Airline unit load devices, Construction and Heavy Machinery, etc.

Main Features:

- Exclusive low- power consumption design
  Up to 6 years of life time
- Unique 8-character long tag ID
- Industrial PVC housing, water/dust proof
- IP50 or IP67 Rated
- Ultra long reading distance, up to 1500 Meters (4900 feet) in outdoor environment

NSAT-701 Personnel Tag

NSAT-702 Small Asset Tag

NSAT-703 Key Fob Tag

NSAT-704 Heavy Duty Asset Tag

NSAT-705 Temperature Sensor Tag

NSAT-706 Asset Writable Tag W/ LED &Buzzer

NSAT-707 Micro Strap Tag

NSAT-708 Wristband Tag

NSAT Series Active RFID Tags

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Specifications:

	NSAT-701	NSAT-702	NSAT-703	NSAT-704
Output Power	-18dBm ~ 0dBm	-18dBm ~ 0dBm	-18dBm ~ 0dBm	2dBm ~ 18dBm
Sensitivity	-85dBm	-85dBm	-85dBm	-93dBm
Reading Range	Up to 180m	Up to 150m	Up to 150m	Up to 1500m
Water/Dust proof	IP67	IP50	IP50	IP67
Battery Life	5 years	4 years	3.5 years	6 years
Power Supply	750mAh lithium battery	550mAh lithium battery	450mAh lithium battery	1600mAh lithium battery
Dimensions (L×W×H)	8.6cm×5.5cm×0.2cm	6.5cm×3.5cm×0.2cm	5.1cm×3.0cm×1.0cm	12cm×5.0cm×1.5cm
Weight	20g	16g	12g	82g
LED & Buzzer	N/A	N/A	N/A	N/A
Extended User Memory	512 bytes-NSAT-701C	N/A	N/A	N/A
To be Continued...				
	NSAT-705	**NSAT-706**	**NSAT-707**	**NSAT-708**
Output Power	-18dBm ~ 0dBm	-18dBm ~ 0dBm	-6dBm	-6dBm
Sensitivity	-85dBm	-85dBm	-85dBm	-85dBm
Reading Range	Up to 150m	Up to 80m	Up to 80m	Up to 100m
Water/Dust proof	IP67	IP67	IP50	IP68
Battery Life	5 years	2 years	3 years	4 years
Power Supply	800mAh lithium battery	850mAh lithium battery	450mAh replaceable lithium battery	550mAh lithium battery
Dimensions (L×W×H)	11cmx3.5cmx1.0cm	8.8cm×4.2cm×0.9cm	Φ29mm × 8mm	250mm × 31mm × 15mm
Weight	22g	32g	7g	40g
LED & Buzzer	N/A	Built-in	N/A	N/A
Extended User Memory	N/A	Built-in 512 bytes	N/A	N/A
Operating Frequency	2.400-2.4835GHz			
Modulation	GFSK			
Communication Rate	1Mbps			
Identification Accuracy	>99.99%			
Operating Temperature	-40°C ~ +70°C (-40°F ~ 158°F)			
Storage Temperature	-40°C ~ +80°C (-40°F ~ 176°F)			
Humidity	5% ~ 95% (non-condensing)			
Shock Resistance	10 ~ 2000Hz, 20mm/15g, Triaxial			
Reliability	MTBF ≥ 1*100000 h			
Certificates	CE/FCC/RoHS			

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NephSystem Technologies RTLS System

Overview:

NephSystem Technologies' Real-time locating systems (RTLS) are used to automatically identify and track the location of objects or people in real time, usually within a building or other contained area. NephSystem's 125KHz/2.45GHz dual frequency of RTLS tags are attached to objects or worn by people.

The system contains the following items to be a whole RTLS package –

1. Activators that work under 125KHz low frequency range (Model NSAR-820)
2. 125KHz and 2.45GHz dual frequency band of tags (Model NSAT-708RTLS, NSAT-709)
3. 2.45GHz NSAR 800 series gain adjustable active RFID reader/writers (Model NSAR-800/850)

NephSystem Technologies NSAR-820 Activator is a stand-alone and fully ruggedized (IP68 rated) signal transmitter that provides a low frequency activation signal (125KHz) which activates or wakes up NephSystem's special activation type of RTLS tags (Model NSAT-708RTLS and NSAT-709) as the tags pass through the NSAR-820 Activator. Then the RTLS tag transmits the tag's unique ID along with NSAR-802 activator's address ID together over to NephSystem's NSAR series of active RFID reader/writers to provide the tag's precise location. This combination can realize the regional location service and make the asset/people movement detection possible.

As long as the compatible wake-up type of RTLS tags is not being activated by the NSAR-820 activator, they will be working at the sleep or quiet mode (no RF signals are being transmitted under this sleep mode) so that the battery life in those tags could be significantly improved or expanded. The NSAR-820 Activator can also be configured via serial port by connecting to a regular PC for some specific parameters such as address, name, reading distance, etc. It is very easy to install activators in the field and their features offer the flexible and versatile applications including coverage for perimeter doors, interior zones, vehicle lanes and other control points throughout the facility.

Specifications of NSAR-820 Activator:

Operating Frequency	125KHz±1KHz
Tag Activating Area	0-7m (the reading radius is adjustable through software)
IP Rating	IP68
Antenna Output Power	<5W
Indicator	LED, Buzzer
Dimensions	188mm×88mm×40mm (L×W×H)
Weight	Built-in software controllable relay channel
Power Consumption	7W
Operating Temperature	-40ºC ~ 60ºC
Storage Temperature	-40ºC ~ 80ºC
Humidity	5% ~ 95% (non-condensing)

Specifications of RTLS Tag (NSAT-708RTLS and NSAT-709)

Operating Frequency	125KHz±1KHz and 2.45GHz
Output Power	NSAT-708RTLS@-6dBm; NSAT-709@0dBm
Reading Distance with NSAR Reader	0~100 meters
IP Rating	IP68 for NSAT-708RTLS; IP67 for NSAT-709
Wake-up Sensitivity	100 uVRMS
Battery Life	4 years for NSAT-708RTLS; 6 years for NSAT-709
Weight	40g for NSAT-708RTLS; 22g for NSAT-709
Operating Temperature	-40ºC ~ 60ºC
Storage Temperature	-40ºC ~ 80ºC
Humidity	5% ~ 95% (non-condensing)

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