NCR Silver Quantum QR1000 Point-Of-Sale Terminal

Technical Specifications Guide v1

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Using this Document:

Format/Contents

This document is designed to help you understand the technical specifications of NCR Silver Quantum Point of Sale. NCR Silver Quantum offers multiple configurations depending on operating system, memory, touch screen, motion sensor, or storage configurations.

Text Notations

Labels on the NCR Silver Quantum box are displayed in **bolded** text.

Text Symbols

This guide contains symbols that identify special emphasis on a function or procedure. Each type of symbol is identified below:

Note: This indicates any additional information that you might want to know about a certain function. This information is outside of the flow of the current process.

⚠ **Caution** - This symbol indicates that the user's actions may have an effect on the system.

General Product Description

The NCR Silver Quantum Point-of-Sale is part of the NCR Corporation family of hardware platforms. The terminal utilizes a Samsung Tab A 10.1-inch tablet with an Octa-core 1.6 GHz Cortex-A53 processor, 16GB hard drive capacity, and Android operating system. The combination offers great performance and lower power consumption in a proven reliable design. This all-in-one solution provides very tight integration of core point-of-sale hardware including a touch screen, magnetic stripe reader, printer, and more.

Overview:

- Fit-for-Purpose – designed as POS terminal and not just another pieced together tablet solution
- Cost effective solution with high value features
- Built-in Customer Display,
- Built-in EMV payment device with NFC
- Built in Scanner
- Built in 10,000 mAh cell pack
- Elegant/Compact/Modern Design
- Purpose built operating system

The durable countertop enclosure provides many benefits, including a small special footprint without the need for wires to connect the customer display, payment device, scanner and USB hub. The modern design provides everything you need to run your business with a sleek, up-to-date appearance.

This highly efficient design does not require a fan to stay cool.

NCR Silver Quantum is configured as a silent, thin-client, solid-state terminal for maximum reliability. Connectors are easily accessible and provide all the connections you will ever need.

The NCR Silver Quantum package includes a 10.1" PLS LCD, color, 1200X 1920 capacitive touchscreen with a 16M colors main display. The bright LCD display provides the best possible display quality, with excellent contrast and brightness. The projected capacitive touch screen provides multi-touch functionality as well as a durable, accurate, fast touch interface with finger input. NCR Silver Quantum offers multiple connection options including two standard USB 2.0 USB B ports, two standard USB 2.0 USB C ports, and one Ethernet connection port. NCR Silver Quantum also features stereo speakers for audio output.

NCR Silver Quantum supports Android operating systems with full support for TCP/IP networking on a 10/100/ Base-T Ethernet network.

NCR Silver Quantum Features and Benefits

Samsung Tablet – Tab A 10.1" Specifications

Features	Benefits
Processor: Octa-core 1.6 GHz Cortex-A53 (Exynos 7870)	Fast performance using powerful quad-core, 14nm FinFET process technology. The Exynos 7870 uses up to 30% less power than its predecessor which utilized 28nm HKMG process at the same level of performance. The 14nm FinFET process and octa-core 6-bit CPUs combine to provide optimal performance and power efficiency.
10.1" WXGA (1920 x 1200 pixels) LCD primary display capacitive touchscreen 16M colors	Energy efficiency paired with excellent brightness, contrast, and color depth. Enables the proper display of high-quality graphics to ease use and decrease training time for retail employees or to directly engage the consumer.
Software-adjustable brightness control for main display	Better display visibility for users as well as increased life for main display.
Integrated projected capacitive touch screen	Projected capacitive screen offers greater durability for applications that do not require gloved or stylus input.
eMMC Flash Storage	16GB solid-state storage on board. Expanded storage available up to 200GB via memory card.
Integrated stereo, speakers	Provides high-quality feedback for user interaction.
Battery	Li-ion 7,300mAh cell pack that provides up to 13hrs of use.
Additional Connectivity	Micro USB (2.0), Bluetooth (V4.2), 3.5mm audio jack, Wi-Fi (802.11a/b/g/n/ac, 2.4GHz + 5.0GHz, BHT80),

NCR Silver Quantum General Specifications (with tablet)

Networking	Auto-selecting 10/100/1000 Base-T Ethernet using TCP/IP.
Primary Display	10.1" WXGA (1280x800) LED LCD of the Samsung tablet.
Touch Screen	Projected Capacitive Touchscreen. Supports only single touch.
Enclosure	Polycarbonate/ABS impact resistant, high strength blend plastic Die-casted Aluminum.
Dimensions (Countertop envelope)	12.60" L x 7.91" W x 7.38" H, 320mm L x 201mn W x 187.5mn H
Base Dimension	12.01" L x 5.51" W 305 mm L x 140mm W
Tilt Angle	Fixed at 46 degrees from vertical
Weight	5.3 lbs., 2.4 kg | with tablet (1.14 lbs. / 0.517 kg) and EMV Module (.14lb / 0.064 kg)
Operating Temperature	32°F – 104°F, 0°C – 40°C
Storage Temperature	32°F – 104°F, 0°C – 40°C. Must be in original pack material in humidity and temperature controlled environment for long term storage.
Humidity	5% - 85%, non-condensing
Environmental Compliance	RoHS, WEEE
EMI Certifications	FCC Class A, RCM, *(CE requires special configurations)*
Safety Certifications	TUV, CB Scheme

NCR Silver Quantum Base - Features and Benefits

Features	Benefits/Description
Qualcom APQ8009 Quad-core 13oo MHz	Fast performance with powerful quad-core technology. Very low power consumption. Long lifecycle commitment. Supports dual, independent video displays and USB 2.0.
10,000 mAh cell pack	Re-chargeable back-up battery so that when power goes down, you don't. Allows for increased mobility of the NCR Silver Quantum unit. In the absence of normal power, the battery powers the unit itself, customer display, payment device, and provides 5v to the USB ports.
Sleek modern all in one design	Reduces the number of wires to clear the clutter from your counters. Fits in, rather than sticking out like a clunky POS.
7" (800 x 480) LED LCD customer display	Energy efficient and long life LED display. Excellent brightness, contrast, and color depth. Enables the proper display of high-quality graphics to ease use and decrease training time for retail employees or to

	directly engage the consumer.
Interactive customer Display	Allows for simple tip entry and customer signature capture for payment.
Connection Hub	Simplifies cable management. All of the ports and wires are consolidated to one side of the device.
Integrated projected capacitive touch screen	Projected capacitive screen offers greater durability for applications that do not require gloved or stylus input. Multi-touch supported for application interaction
Integrated payment device (US models only) • MSR (Magnetic Strip Reader) • EMV • NFC	Integrated encrypting, 3-Track MSR for secure credit. End-to-end encryption is possible with certain applications. The terminal can be configured with no MSR module. Enables EMV Chip and Sign and contactless payments, including Apple Pay, in a single device PCI PTS 4.1 POI SRED, EMV Level 1 & 2 and EMV L1 Contactless, Visa Paywave & MasterCard, Amex & Discover Contactless certified LED and beep indicators for battery and reader status. Beeps when ready, and beeps when card can be removed from smart card reader (for EMV transactions)
Lock down tablet feature	Allows tablet to be secured from theft.
Ability to pull tablet out	Allows you to use the tablet for multiple purposes besides the POS.
Exterior tablet control buttons	Allows tablet to power-up/down and control volume without having to be removed.
Built in 2D camera / scanner	Reliant on feature availability, Allows for the scanning of QR codes and standard barcodes for scanning software-supported loyalty identification, coupons, and more.
Utilizes Standard off the shelf, high-end tablet	Designed specifically for Samsung Tab A 10.1" tablets, which are readily available and easy to replace. When the tablets upgrade, so do you, taking advantage of any upgrades to Android or electronics associated with an already high end tablet.
USB and Ethernet Port protection	All USB and Ethernet ports are equipped with a rubber plug to protect them from dirt and moisture when not in use.
4 USB 2.0 ports (Qty. 2 in USB C configuration and Qty. 2 in USB B configuration)	Provides data to and from any USB peripheral. Fast data rates of USB 2.0 at 480 Mbps mean quick response time between the device and connected peripherals.

USB ports compatible with multiple accessories	Reliant on feature availability, offers connection options to additional scanners, printers, scales, and external payment devices.
Dedicated Ethernet port	A single port to provide direct connection to Ethernet to ensure strong connections to internet.

Customer Display

The 7" compact, color, customer-facing display is touch enabled for easy customer interaction with full motion video. The projected capacitive touch screen provides full multi-touch functionality with finger input. This accurate touch system enables customers to enter tips, email addresses, and credit card payment signatures.

A customer display gives customers the ability to view orders as they are entered into the point of sale, resulting in increased order accuracy. Additionally, reliant on application development, it can be used as an advertising medium so that clients can display specials and promotions to their customers during checkout. The display is built directly into NCR Silver Quantum for a clean high quality look. The customer display is powered by the internal back up battery in the event that the power goes out.
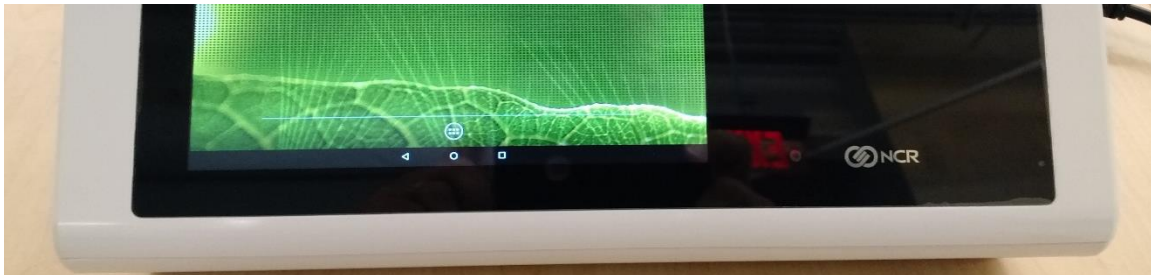

Customer Display Specifications

LCD	7.0" LCD, LED, 1024 (RGB) x 600
Touch	Projected Capacitive single-touch
Viewing angle Range:	80 (Cr>2) Horizontal, 70(Cr>2) Vertical
Tilt Angle	Fixed 45 degrees
Display colors	16.7M
Luminance for LCM	350 min
Operating Temperature	15°F – 120°F, -10°C – 50°C
Storage Temperature	5°F – 120°F, -20°C – 50°C (Must be in original pack material in humidity and temperature controlled environment)
Humidity	5% to 85%, non-condensing

Built-in 2D Scanner

By using the 2D scanner, customers can scan coupons or loyalty identification. All you have to do is waive your software-supported loyalty identification or coupon by the NCR logo. Built-in scanner functionality is reliant on the availability of scanning features in the product.

Power Cord Installation:

Plug power connector into terminal. Plug power cable into round outlet on the far left.
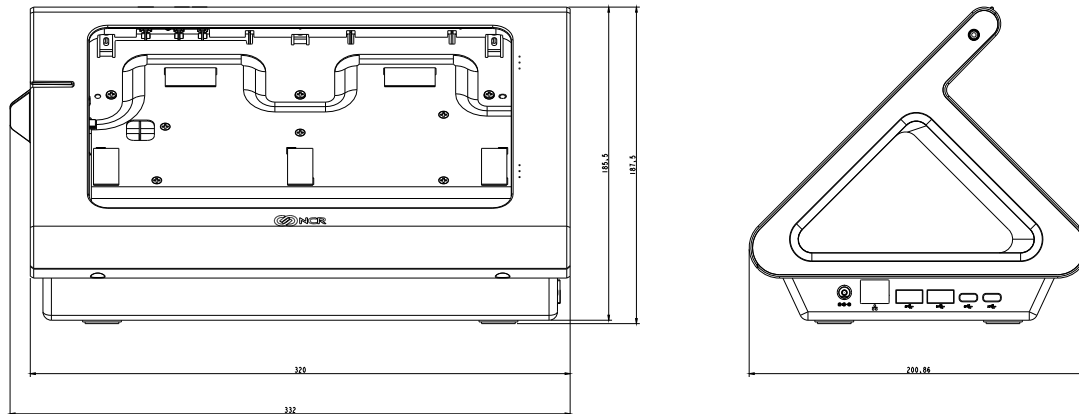

Cash Drawer Connectivity

NCR Silver Quantum is configured so that the cash drawer must be connected to printer by using a "drawer kick" cable. On the printer, there is a 6-pin, cash drawer port (RJ12) which supports 24v as standard. NCR provides the "drawer kick" cable with purchase of a cash drawer.

EMV Reader Indicators

There are 4 LEDs on the top of the reader to indicate progress of a contactless transaction. In addition, there is a buzzer inside the reader to prompt Swipe/Tap/Dip.

- Reader ready: The Red LED on the side of the reader will be On.
- Reader waiting for card: The reader will generate a beep prompting user to Swipe/Tap/Dip. One LED light on top of the reader will turn on (Only for Contactless).
- Reader reading the card: 2 LED lights turn On.
- Card read successful: 3 LED lights turn On.
- Card Processing Error/Multiple Contactless Cards detected: All lights are turned off to indicate that the contactless interface is not acceptable for this transaction.
- Card Processing Error: Only fourth LED light turns On indicating condition for use of the contactless interface have not been satisfied (ex: As an added security measure, transaction amounts over a pre-set threshold may require a card swipe or insert.).

Dimensions of NCR Silver Quantum (mm)

Additional Notes and Legal

Cable Plugs: NCR Silver Quantum includes protective plug coverings.   These are used to prevent the outlet from a foreign material from accidental getting in to the outlet. Please make sure these coverings are in place when plugs are not being used.

Footprint: An area of no less than 15" inches square is necessary to properly install an NCR Silver Quantum unit with EMV module. This will accommodate the unit as well as its associated mounting hardware.

Power: NCR Silver Quantum has an external 65 watt 12V/5.417 switching power supply for both 100VAC and 240VAC (Auto-sensing*).* Source power is drawn from a regular AC wall outlet. The electronics are "universal" – that is, they will function when connected to standard wall outlets of most nationalities around the world. For international configurations of the NCR Silver Quantum in locales other than North America, typically the country specific power cord is ordered separately.
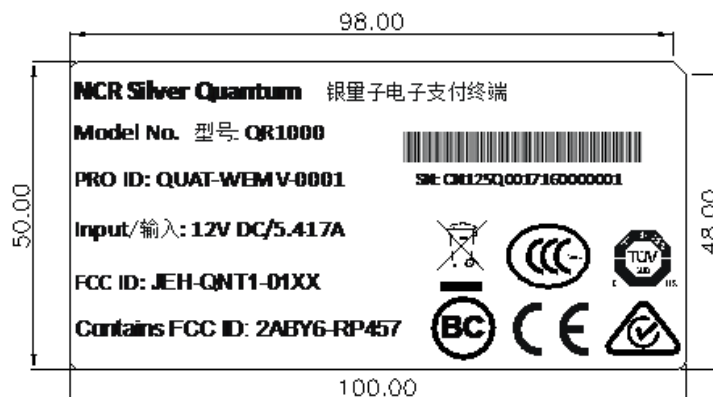
Moisture *:* NCR Silver Quantum should not be installed in areas where they might be exposed to direct water spray. NCR Silver Quantum units are not meant for outdoor installation.

Touch Screen Cleaning: Any standard glass cleaner that is not ammonia based or water can be used to clean the touchscreen. Always spray the glass cleaner on the cloth or towel and then clean the touchscreen to prevent cleaner from running down the glass and gathering on the front bezel.

Magnetic Strip Reader (MSR) Cleaning: Periodically, the MSR may need to be cleaned depending on usage. Pre-saturated MSR cleaning cards can be ordered from NCR (50/box) using part number 1666-K024. Otherwise, wrap a card with a saturated paper towel of glass cleaner and swipe gently to clean reader head. Do not use this method to clean EMV reader (chip reader)

Countertop mounting: There is a screw hole available on the bottom of the terminal for countertop mounting using M4 screw.

Certification Label

Product Labels

Series number, serial number, and model number are located on the bottom of the terminal.

Radio Frequency Interference Statements

Federal Communications Commission (FCC)

Information to User

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense. NCR is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by NCR. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user. The user is cautioned that changes or modifications not expressly approved by NCR may void the user's authority to operate the equipment.

Canadian Department of Communications

These digital apparatuses are Class A digital apparatuses that comply with Canadian ICES-003.

These digital apparatuses do not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Le présent appareil numérique n′émet pas de bruits radioélectriques dépassant les limites applicables

aux appareils numériques de la classe A prescrites dans le règlement sur le brouillage radioélectriques

édicté par le ministère des Communications du Canada.

Declaration of Conformity

Manufacturer's Name   : NCR Corporation

Manufacturer's Address : NCR Corporation

Retail Solutions Division – Atlanta

2651 Satellite Boulevard

Duluth, GA 30096-5810

Type of Equipment

Information Technology Equipment

Point of sale Terminals

Model Number

Safety Warning

Warning: This product does not contain user serviceable parts. Servicing should only be performed by a qualified service technician.

Attention: Ce produit ne contient pas de components reparable par l'utilisateur. Le

service ne doit être fait que par un technicien qualifié.

Warnung: Dieses Produkt enthält keine verbrauchbaren Teile. Service nur durch

einen qualifizierten Fachmann.

Lithium Battery Warning

Warning: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Attention: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type recommandé

par le constructeur. Mettre au rebute les batteries usagées conformément aux

instructions du fabricant.

Warning:: Gefahr von Explosionen wenn die Batterie falsch eingelegt wird. Ersetzen

Sie nur mit gleichen oder gleichwertigen Batterien wie vom Hersteller empfohlen.

Entsorgen Sie die Batterien wie vom Hersteller empfohlen.

State of California Perchlorate Material Notification

Perchlorate Material — special handling may apply.

See *www.dtsc.ca.gov/hazardouswaste/perchlorate*.

The lithium coin cell batteries in this product contain Perchlorate and are subject to

the State of California's Best Management Practices (BMP) Regulations for Perchlorate Materials.

Please visit the above website for more information.

Battery Disposal (Switzerland)

Refer to Annex 4.10 of SR814.013 for battery disposal.

System Weight Considerations for Wall or Ceiling Mounted Equipment

Warning: Terminals must be mounted securely to prevent a hazard.

They must be installed in accordance with local building codes. The location where

the unit is installed should be able to withstand four times the weight of the unit

Attention – Doit être installer précautionneusement afin d'éviter

tout accident éventuel. Il doit être installé dans le respect des codes de l'établissement.

Power Supply Cord Used as Disconnect Means

Caution: The power supply cord is used as the main disconnect device. Ensure that the socket outlet is located/installed near the equipment and is easily accessible.

Attention: Le cordon d'alimentation est utilisé comme interrupteur général. La prise de courant doit être située ou installée à proximité du matériel et être facile à acceder.

Environmental Consciousness

Do not discard the unit or its parts (e.g. batteries) with general household waste;

recycle or dispose in accordance with your local regulations.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital

device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide

reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FOR MOBILE DEVICE USAGE (>20cm)

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled

environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Industry Canada statement

1. This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:
   1) this device may not cause interference, and

   2) this device must accept any interference, including interference that may cause undesired operation of the device.

1. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
   1) l'appareil ne doit pas produire de brouillage, et

   2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

2. This Class A digital apparatus complies with Canadian ICES-003.
2 Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Batteries

There are limitations to how long a battery can operate or be stored before requiring replacement. Many factors affect the actual life of the battery. Such as heat, cold harsh conditional and severe temperature drops

Battery Safety Guidelines

- The area where units are charged should be clear of debris and combustible material or chemicals. Particular care should be taken where the device is charged in an ono-commercial environment
- Follow the device usage, storage and charging guidelines
- Do not use incompatible chargers. Use of an incompatible charger may present a risk of fire, explosion, leakage, or other hazard.   If you have any questions about the compatibility of the charger contact support.
- Do not disassemble or open, crush, bend or deform, puncture or shred the device
- Severe impact from dropping a battery containing device on a hard surface could cause the battery to overheat.
- Do not modify or remanufacture, attempt to insert foreign objects into the device, immerse or expose to water or other liquids, or expose to fire, explosion or other hazard.
- Do not leave or store the equipment in or near the areas that might get very hot, such as in a parked vehicle or near a radiator or other heat source.   Do not place the device into a microwave oven or dryer.
- Device usage by children should be discouraged.
- Please follow all local regulation to properly dispose of used rechargeable devices with batteries
- Do not of device/batteries in fire
- If you suspect damage to your equipment r battery, contact support to arrange for inspection
- This device must not be used at low air pressure, like that found at high altitudes.

PID: 497-QANT-0001