Your Guide to POS Hardware

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Table of Contents

Introduction to POS Hardware

Let's face it. There's a lot of point of sale equipment on the market.

There are hundreds of manufacturers selling thousands of products, from simple receipt printers to wireless tablets and payment devices.

Pricing for the same type of products can vary significantly, so how do you know what's right for your business? How do you even know which products you need?

That's where we come in. We're point of sale experts — and we're here to help.

Topics covered in this guide include:
- How each piece of hardware works and what it's for
- The difference between top-of-the-line models and discount models
- Whether it's worth paying up for a premium brand or saving your money
- Our expert recommendations on the best POS hardware

Let's get started!

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THE BASIC SETUP

The most basic setup you can have includes the core components you need for your system: a touch PC, receipt printer, cash drawer, and barcode scanner.

This is more or less the bare minimum from a hardware perspective — and each piece of hardware plays a key role in running your business.

Read on to learn about each piece of hardware included in our basic point of sale setup.

Touch PC

Also known as a terminal or an all-in-one, a touch PC is a variation of a desktop computer. Touch PCs include all of the traditional elements of a desktop computer, with the addition of a touchscreen monitor. Touch PCs run your POS and are the most important part of your system.

What are the minimum specs for a touch PC?

Your POS software determines the minimum computing specifications you need.
We recommend having at least 4GB of RAM and at least a 1.8GHz processor.

As you increase the number of POS stations at your business, you'll also want to increase the processing power of your touch PC. We recommend at least a 2.0GHz processor for the server station if three or more stations are located at the same store. (The server station is the POS station that houses your database and acts as a host for the other terminals).

Why do prices vary so much?

Prices can vary significantly based on computing power and name brand. If you find a computer at an extremely low price, double-check the specs and make sure they meet the minimum requirements of the software you're considering.

Another pricing factor is commercial grade versus consumer grade. POS systems are meant to be used in rugged environments. Have you ever seen a grocery store employee using a touch PC? They quickly punch things in while scanning your items — and they don't use the touchscreen gently. While consumer-grade touchscreens are much cheaper, they cannot withstand the daily usage of a point of sale.

Are there any substitutions for a touch PC?

We occasionally sell a traditional desktop PC bundled with a separate touchscreen monitor. This is not recommended due to the amount of space a traditional PC takes up, and the number of wires it requires for setup. Checkout lanes have very limited space, so removing the extra tower PC from the equation allows for less cable clutter, and less hardware to house.

Receipt Printer

Receipt printers are vital for printing sales transaction records. There are a few different types of receipt printers available on the market.

What's the difference between thermal and impact printers?

Thermal printers produce a printed image by selectively heating thermal paper (receipt paper) when the paper passes over the thermal print head, turning black in the areas where it's heated. Since the paper is heat-sensitive, there is no need to purchase ribbons. Thermal printers have a more defined print, are quieter, and are usually about seven times faster than other printers used in point of sale systems.

Impact printers rely on a forcible impact to transfer ink to the media, similar to a typewriter. Unlike thermal printers, impact printers require ribbons which can come in one-color or two-color formats. Two-color formats are typically used so that the system can print in red for modifiers. Impact printers can also handle multiple copies of paper using carbonless copies so that there are two to three copies for each print.

Thermal Printer   **Impact Printer**

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Receipt Printer (cont.)

Which type of printer do you recommend?

We always recommend thermal receipt printers because they print faster and they're much quieter. Thermal is best for any type of customer receipt, while impact printers are almost exclusively used to print kitchen tickets.

Are receipt printers plug-and-play?

It depends. If you purchase a receipt printer separate from your POS system, it will not be plug-and-play — you'll have to install the correct drivers so the printer can talk to the computer. If you purchase a pre-configured system from POS Nation, the printer will be plug-and-play.

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Cash Drawer

POS technology changes rapidly, but the one component that has remained constant is a metal box used to securely store cash. Despite the movement to a cashless consumer economy, cash drawers are still a vital component of a point of sale system.

A cash drawer has distinct compartments for coins and bills of different values, which allows cashiers to quickly and accurately count customer change without shuffling through bills and coins. Cash drawers take the brunt of everyday wear and tear, so it's common to need replacement parts such as tills, mounting brackets, and spare keys.

How do cash drawers pop open?

Interestingly enough, a cable from the receipt printer to the cash drawer prompts the device to open when a cash transaction is completed. The cable looks like a phone line, and it is specific to the brand of printer. If a customer's cash drawer won't open, 99 percent of the time it's because the drawer isn't connected to the receipt printer.

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Cash Drawer (cont.)

Are all cash drawers the same?

Pretty much. Cash drawers offer different dimensions. Some are built with reinforced metal and others can be mounted, but they're basically all the same.

While they are less common, there are also cash drawers that bypass the receipt printer and plug directly into the serial port on a computer.

What about cash drawer counts?

Properly setting up your cash drawers to flow with your business processes can increase productivity. For example, some businesses perform cash counts at the end of a shift, even if the business is still serving customers. To avoid downtime while counting the drawer, many customers employ a two-till system in which they simply swap tills (the plastic insert that holds the cash and coins) and keep the register open.

Another common request we have is for each clerk or staff member to maintain a separate cash drawer so that a cash count discrepancy can be easily associated with the appropriate clerk. This is a fairly simple setup that only requires two cash drawers.

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Barcode Scanner

Barcode scanners are electronic devices used for reading printed barcodes. They include a light source, a lens, and a light sensor that translates optical impulses into electrical ones. There are a myriad of scanners available on the market, including pen-type readers, laser scanners, CDD readers, and camera-based readers.

How does a scanner work?

Scanners typically use laser beams to reflect light off a barcode. To read the barcode, the scanner measures the intensity of the reflected light. Scanners only read what is put in front of them and they do not associate UPC codes with a specific inventory item. This association is created through your point of sale software.

What types of scanners are there?

The most basic scanner is a wired handheld 1D scanner. These scanners read 1D barcodes (traditional barcodes with black and white lines) and typically have to be placed directly in front of the barcode. If you've ever seen a clerk scan an item over and over for it to read, they were likely using an inexpensive scanner. Better models are suited to read broken or angled barcodes. 2D scanners have the ability to read the increasingly popular 2D barcodes such as QR codes.
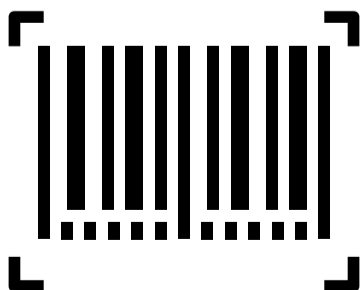
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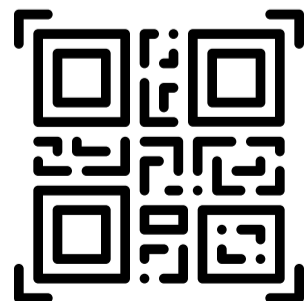
Barcode Scanner (cont.)

Many customers request wireless scanners for their obvious benefit. Wireless scanners, however, are often significantly more expensive than their wired counterpart. Presentation-style scanners are not shaped like the traditional gun-style scanner.

Instead, these devices are made for the barcode to be presented in front of the scanner — as opposed to the scanner being presented in front of the barcode. Presentation-style scanners are typically bi-optic, which basically means they can read barcodes better. Not surprisingly, these models are more expensive than the traditional scanner.

Lastly, there are ID scanners designed to verify customer identification for age-restricted purchases like tobacco and alcohol. All ID scanners are 2D, but not all 2D scanners can read IDs.

Barcode Scanner (cont.)

Which scanner is right for my business?

The answer to this question primarily depends on your business flow.

High-volume businesses often find presentation-style scanners to be the most efficient because clerks can use two hands to slide products in front of the scanner. Because these scanners can read barcodes from almost any angle, checkout speed is dramatically increased.

However, if you are selling large, bulky products that cannot be presented to the scanner, then a more traditional gun-style device is what you need. And if mobility is what you're seeking, then wireless is your best choice.

Is there a big difference in price?

Yes. Basic scanners can cost around $100 while advanced models can cost over $1,000. But if you're a high-volume retailer, a high-quality scanner will easily pay for itself by reducing lines and checkout times.

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ADD-ON HARDWARE

Once you have your basic POS setup, it's time to think about what else your business might need.

There are dozens of add-on devices available to enhance your system, increase its functionality, and improve its performance.

We'll touch on barcode and label printers, pinpads, customer displays, scales, tablets, and handheld inventory devices in this section.

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Barcode and Label Printer

<u>Barcode and label printers</u> allow merchants to create adhesive labels that can be used as shelf tags and barcodes. Based on our experience, boutiques and stores selling locally-produced goods, uniquely shaped items, or one-of-a-kind products frequently have the most need for a label printer.

What type of label printers are there?

There are two primary variables that differentiate label printers. The first is size. Most label printers are either 2 inches or 4 inches wide, with the 2-inch model being the most common. The second distinguishing factor is the technology used to print the label. Label printers can use either thermal transfer or direct thermal technology to print the labels.

Do I need a direct thermal printer or a thermal transfer printer?

It depends. Will your labels be in a hot environment or exposed to direct sunlight? Will you be printing labels with any colored text other than black? Will your labels be in place for over one year? If you answered yes to any of these questions, then a thermal transfer printer is what you need. Thermal transfer printers are slightly more expensive, but if they fit your specific needs, the extra cost is worth it.

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Barcode and Label Printer (cont.)

What is the difference between direct thermal and thermal transfer?

Direct thermal printers use heat-sensitive paper that darkens when exposed to heat. While printing, the printer head directly contacts the labels and uses heat and pressure to mark the label. Again, these models are slightly cheaper and have longer durability, but the labels are affected by heat and can darken over time.

Thermal transfer printers use carbon ribbons and heat to impact the labels while printing. This method results in a crisper print and a label that can withstand heat and sunlight. Unfortunately, this setup also requires that the ribbon and print head be replaced more frequently.

What kind of labels can I print?

Labels can be customized in a variety of shapes and sizes to meet your needs. The most common label we sell is 2.25 inches x 1.25 inches, which is the size of a standard shelf label. Other industry-specific labels that we frequently sell are:

- **Cigar labels** - long and thin tags
- **Jewelry tags** - labels that fold over to prevent glue from touching the product
- **Lawn and garden labels** - printed on plastic so they can withstand harsh outdoor environments

Pinpad

Pinpads are electronic devices used in a debit or credit card transaction. Pinpads have hardware and software security features that ensure the security keys and PIN numbers are erased immediately in the event of someone tampering with the device. There are also standards required by the payment card industry that pinpads must meet to ensure adequate security.

Can I accept debit cards without a pinpad?

There is a common misconception that, if a merchant doesn't have pinpads, some customers won't be able to pay them. There are very few debit cards that are issued without a Visa or a Mastercard logo. The Visa or Mastercard logo will allow the merchant to run the transaction as a credit card rather than a debit card.

Why do I need a pinpad?

Fees — or rather, a reduction of fees. Although there's no set rule because processing fees are always dependent on your merchant services provider, debit transactions are often less expensive than credit transactions. Debit transactions typically charge a flat fee while credit transaction fees are based on the total transaction amount. Because of this flat verse variable cost structure, a breakeven point exists. And for small transactions, debit can actually be more expensive than credit. A good rule of thumb is that a $20 transaction is around the breakeven point.

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Pinpad (cont.)

Should I get a pinpad?

Yes. Swiped cards are quickly becoming a thing of the past. There are enforcement rules that can place extra burdens on merchants who are not offering a secure transaction, like a pinpad. MSRs, or magnetic stripe readers, are no longer PCI-compliant. This means that they're easier to hack and your customers' credit card data is at a higher risk of being stolen. Plus, EMV, NFC, Apple Pay, and most new and developing payment technologies require pinpads.

What type of pinpads exist?

The most basic pinpad does not include a credit card swipe and only allows for PIN entry. Signature capture pinpads allow customers to swipe credit cards and sign their name electronically, like the pinpad at your local grocery store. Signed receipts can help prevent chargebacks. These pinpads can also project advertisements or videos on their digital screens when they are not being used.

Can I use any pinpad with my POS system?

No, pinpads must be encrypted with the merchant's payment processor, and they are typically designed for specific software programs. That's why it's always helpful to speak with a point of sale specialist before purchasing your pinpad.

Customer Display

Customer displays show information about retail items and prices. Typically, they stand alone with a weighted base that can be extended to different heights or they are integrated to the rear of the POS terminal.

What are the different types of customer displays?

Customer displays differ by the interface, which displays the graphics. Traditional displays, or dot-matrix displays, use two-line LED technology to display two lines of green text on a black background. Although they're not as common, they're the most affordable customer display. The increasingly popular model displays graphics on a full-color LCD screen. These screens are small monitors that can project pictures, text, and videos. LCD models aren't much more expensive than the old dot-matrix style, so we encourage our customers to make the upgrade.

LCD screen

LED screen

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Customer Display (cont.)

What's the difference in a pole display and a rear display?

The difference in these two models is how the display is mounted to the system. A pole display is mounted on a pole and can be positioned anywhere near the POS system. A rear display is mounted directly to the back of the POS system, which requires the point of sale to be directly in front of customers.

Do I need a customer display?

Some states require customer displays. If you are located in a 'customer display free' state, then you don't necessarily need one — but it's a nice feature to incorporate into your system. Customers can see prices as items are rung up, which gives them confidence in their purchase.

Are there other advantages to a customer display?

Yes! In our opinion, the customer display is the most underutilized piece of hardware on the market. When not in use, the display can be programmed to run custom videos and graphics. Merchants can even supplement partnerships with their vendors and get paid to run their ads — or advertise their own in-store promotions and specials.

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Scale

Scales have the potential to save your business time and money. When your scale and POS system communicate seamlessly, you'll avoid mistakes. There are several different varieties of scales, however, an understanding of the differences is key in determining which one you need with your system.

What types of scales are there?

There are three primary types of scales used with point of sale systems: barcode printing scales, in-counter scanner scales, and integrated scales.

What are the differences between each scale?

Barcode printing scales are the ones you see in the meat department at your local grocery store. Product is placed on the scale, weighed, and the scale prints a barcoded label that identifies the item being sold and its price based on the weight. Barcode printing scales are great for meat markets, seafood markets, delis, cheese shops, and any business selling products by the pound to be packaged and wrapped by a clerk.

Scale (cont.)

In-counter scanner scales are what you see at the checkout register of your local grocery store. Scanner scales use bi-optic technology to scan barcodes, which means they contain both a vertical and horizontal scanning surface. This design maximizes efficiency and allows clerks to draw a product across the scanner scale at almost any angle to read the barcode. Then, on the same scanning surface, the product can be weighed and priced. Think of produce sold by weight at your grocery store. Although expensive, these scales are absolutely necessary for high-volume retailers.

Integrated scales are the most basic scales we sell. They're often used at small markets, frozen yogurt shops, or any other establishment selling items by weight (but only have a limited volume of barcoded items). When products are placed on these scales, the weight is transmitted to the POS system and then a price is calculated based on the product's price per unit of weight.

Scale (cont.)

Do barcode printing scales integrate directly with the POS system?

Although the barcodes printed by these scales can be read by the POS, the point of sale and barcode printing scale are not actually tied together. Two product databases are actually maintained — for example, if you sell apples by the pound, you have to enter the apples into both machines. This requires a little extra work on the front end, but the setup is very manageable after the initial work.

What if I have multiple barcode printing scales?

You can network your barcode printing scales through a wireless or wired connection to ensure all the scales reflect the same product database.

Tablet

The advent of tablet POS systems has dramatically changed the point of sale market in the past decade. From specialty markets to boutiques, tablets have found their way into a variety of commercial environments.

What's so great about tablets?

Tablets are sleek, small and mobile. If space is a limitation, or you need to carry around your POS system, then tablets can be very beneficial.

What is the downside of using tablets?

Most tablets on the market are consumer-grade — and you get what you pay for. They can also have limited internet connectivity and depend on WiFi or a cellular signal, which is not always reliable. Additionally, most tablets lack horsepower and offer inferior processors to larger computers.

Tablets definitely have their place, but we don't envision traditional terminals becoming obsolete. We do offer commercial-grade tablets for businesses that want to use them.

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Tablet (cont.)

How do you recommend using tablets?

As mentioned, we don't support the replacement of traditional POS terminals with tablets just for appearance sake. Instead, we recommend using tablets to augment your current operations. We've sold tablets for numerous situations, but below are the most common scenarios where we've seen tablets add value:

- **Small Footprint** - Tablets are small and sometimes space is just limited. Tablets can be placed into docking stations and act as a low-profile POS system.
- **Line Busting** - Tablets are great for busting the line during busy times.
- **Receiving Inventory** - Many retailers use tablets to receive inventory in their stock room. Instead of counting each item, they can scan them directly to the point of sale.
- **Trade Shows** - Retailers have also used tablets to run transactions at trade shows and other temporary sale sites.

About 80 percent of the customers and prospects that call asking about tablets don't end up purchasing one. Most of the time, when we ask why someone wants a tablet POS, they can't put forth a legitimate business reason beyond the appearance. Once we walk through the business scenario, most people decide against tablets.

Handheld Inventory Device

Handhelds, or inventory devices, are mobile computers used to facilitate inventory counts.

How does a handheld assist my inventory count?

A handheld allows the user to scan inventory products one by one or scan an individual product and then enter a quantity. After an inventory count, the device will then sync back with the POS system. A discrepancy report is created, showing how the device's product count differs from the product count that exists in the point of sale.

Is a handheld different from a scanner?

Yes. Although both pieces of equipment are mobile and can operate wirelessly, they operate differently. Scanners simply read barcodes. Inventory devices, however, count and store the information they have scanned.

Handheld Inventory Device (cont.)

How much do inventory devices cost?

There are handhelds with limited functionality, only allowing for inventory counts, for a few hundred dollars. More advanced handhelds with additional features can cost almost $2,000.

What else can handhelds do for me?

You can also run price checks with these devices. Our more expensive models also allow for creating and editing inventory, generating and checking in purchase orders, and adjusting inventory in addition to counting it.

Are there any substitutes for an inventory device?

Yes. We frequently sell tablets accompanied with a Bluetooth scanner as an inventory device substitute.

Your Guide to POS Hardware

How does it feel to be in the loop about the most common pieces of POS hardware? We know it's a lot to take in, and the industry is changing rapidly. Lucky for you — we've got your back!

If you're in the market for a point of sale system, be sure to schedule a live demo to see our software in action. You can also get in touch with us at 1-877-727-3548 or sales@posnation.com for any hardware or POS solution questions.

If you're a current POS Nation customer who's ready for a hardware add-on or upgrade, reach out to our tech support team at support@posnation.com.