



111-38-URM-004

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## KDS Network Requirements

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### User Manual

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## 1. Introduction

The Epson KDS can be either a Single Station configuration (1 screen) or Multi Station configuration (2 – 9 screens). A single station KDS printer/device does not require a network for operation, although it does require network connectivity for configuration. A multi station KDS setup requires that all of the devices are connected together on a Local Area Network. This document outlines the specific network requirements for the Epson KDS.

## 2. IP Configuration

Epson KDS printers and boxes ship with DHCP enabled by default and the KDS is fully operational in DHCP mode. In Multi Station the devices recognize each other using the MAC address which is permanent and does not change. Even if DHCP IP leases renew and devices obtain a new/different IP address the KDS will continue to operate and the devices will still communicate with each other.

Epson generally recommends reconfiguring KDS devices to static IP as there are less issues with POS losing connectivity to the devices.

If left in DHCP mode Epson recommends routers are configured such that the devices will reacquire a specific IP based on the device MAC address.

### 2.1. Private IPv4 Address Requirement

Operation of the system is restricted to private IPv4 address ranges only, as defined by the IANA (Internet Assigned Numbers Authority). This rule applies to both Single Station and Multi Station setups. All devices on a KDS setup must have IP addresses in one of the following ranges. Any KDS device that obtains a public address shall temporarily cease operating, until a private IP address is restored.

Table 2.1: List of acceptable private IPv4 address ranges:

<b>RFC1918 Name</b>	<b>Start address</b>	<b>End address</b>
24-bit block	10.0.0.0	10.255.255.255
20-bit block	172.16.0.0	172.31.255.255
16-bit block	192.168.0.0	192.168.255.255

Link for RFC1918:

<https://tools.ietf.org/html/rfc1918>

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Should a public IP be used with any KDS display, the order table view will be suspended, and the message “Cannot use public IP” will appear on screen:



Figure 2.1: KDS Display screen in suspended state due to public IP

### **3. Single Station**

The Single Station KDS printer/device requires network access for configuration. The network can also be used for operation and the basic requirement is that the KDS device is network accessible by the POS or wherever the print jobs are originating.

### **4. Multi Station**

In the Multi Station KDS all of the KDS devices communicate to the Master KDS printer/device. All of the KDS devices must be able to communicate over a Local Area Network.

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## 4.1. KDS Device Communication

KDS devices communicate using multicast with a 1 hop max. All devices must be on the same network segment with no routers in between.

## 4.2. Network Bandwidth Requirements

The Epson KDS requires that the internal LAN support sustained throughput of at least 512 Kbps. This ensures devices can adequately communicate with each other.

## 5. Port Requirements

The following is a general list of ports used by the Epson KDS. Not all ports are required for general operation – some are used solely for debugging/troubleshooting. Epson recommends all of the ports are left open:

Port	UDP/TCP	General Purpose
22	TCP	Troubleshooting and debugging.
80	TCP	Access to KDS web server. Configuration and troubleshooting.
123	UDP	NTP for multi station device time synchronization.
514	UDP/TCP	Troubleshooting and debugging.
3289	UDP	KDS Device Configuration
3290	UDP/TCP	KDS Device Configuration
3291	UDP	KDS Device Communication
3292	UDP	KDS Device Communication
9100	TCP	Print data port