![AVE - Strength in the Business logo]

Cash Register / POS
&
ATM Banking

Joint Marketing Program

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&
ALL ATM Machines
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TODAY
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Introduction

The VSI-Pro has built in drivers for most of thepopular POS / Cash Registers in the world today and also connects to our extensive line of additional interfaces that convert data to our standard serial format. The VSI-Pro does direct Text Insertion of the transaction data into the video already formated so can work immediately with any DVR on the market today.

The VSI-Pro or our line of interfaces can export the transaction data in standard ASCII RS-232 protocol that is already formated for a pleasing display similar to what the user will see on the receipt or journal printer.

Therefore OEM suppliers of DVRs can simply write a driver for one of their onboard RS0-232 COM ports to read the transaction data and display or store on the internal DVR HDD. Current Time/Date Search features in most DVRs can find clerk and other events related to time. Additional text search features can be added to search the transaction database for questionable transactions or events.

For multiple POS/Cash Register interfacing to one RS-232 COM Port the following protocol can be implemented in the DVR to assign the corresponding transaction data to the proper camera in the DVR. The AVE VSI-ADD protocol using our Hydra, Regcom, Networker or Vnetworker devices creates a simple RS-485 high speed network that deliver all the POS data to the DVR.

AVE POS Networking Protocol
(VSI-ADD Protocol)

The AVE VSI-Pro, IF ECR Interface Cards and other POS Adapters export the POS data in formatted ASCII text via RS-232 directly. This data can be read by any DVR Com Port for recording as a separate data file appended to the Audio/Video file.

For multiple POS on one DVR you could use multiple RS-232 ports but this is cumbersome and the length of runs is limited.

The AVE "Regcom" is a device that connects directly to any of the AVE POS interfaces listed above or any RS-232 source. This buffered device takes the POS data and converts it to an RS-485 network.

The "Networker" connects only to the VSI-Pro and supports the same RS-485 network. This network is terminated by a "Hydra" which decodes the RS-485 network and sends all the data to one RS-232 Com Port on the DVR.

The data from Hydra to the DVR Com Port has the following data format:

    <ESC> ADDR {TEXT TO BE DISPLAYED}

Where ESC is 1BH; ADDR is one byte binary code. The valid address is 1 through 16.

The DVR will then read this protocol and decode the proper POS interface data to be associated with the respective camera.
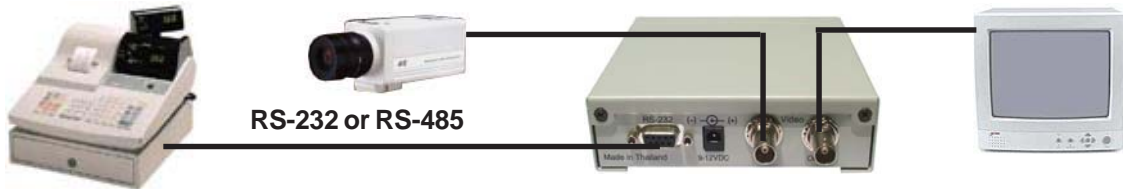
POS
Cash Register
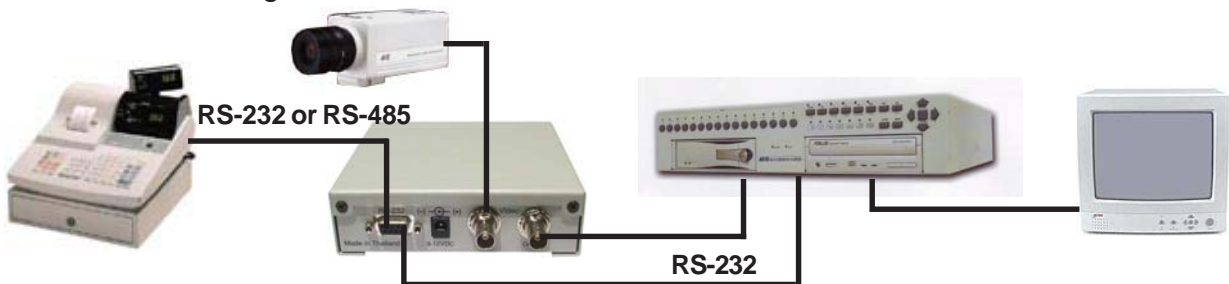# Interfacing

Traditional Text Overlay

The AVE line of POS (Point of Sale), Cash Register and ATM Interfacing is the most extensive product line in the industry with over 350 unique POS/Cash Registers and ALL ATMs Worldwide. The VSI-Pro can connect directly to any RS-232, RS-485, RS-422 or HiZ Serial Communication Port with the specific cable for the target POS / Cash Register or ATM. Other types of interfacing like Parallel/Centronics, IRC, Ethernet LAN, TCP/IP, USB or PS2 require separate adapters which convert these special protocols either in a tap or emulate mode to RS-232 and is sent to the VSI-Pro. For low cost ECR (Electronic Cash Registers) which use internal dot matrix, drum or thermal printers the AVE line of IF and TPIF PCBs are mounted internal to the ECR and convert this data to RS-232 and deliver to the VSI-Pro.

RS-232 or RS-485

Basic Text Overlay Configuration

DVR Text Overlay and Search

The AVE line of DVRs and compatible 3rd party DVRs support reading RS-232 data in using a special port from the AVE line of POS / Cash Register and ATM Interfaces. The DVR then displays and/or saves this data in an electronic file format with the audio and video recordings. Text Search routines and Exception processing built into the DVR, allow the user to search this database for questionable transactions and play them back along with the audio and video recordings.

RS-232 or RS-485

RS-232

DVR Configuration

Cables

A broad line of cables are provided by AVE to connect to the POS or Cash Register. These cables can tap the current data stream from printers, Pole displays or Serial ports. The VSI-Pro can also emulate these devices so will work even if the device is not connected.
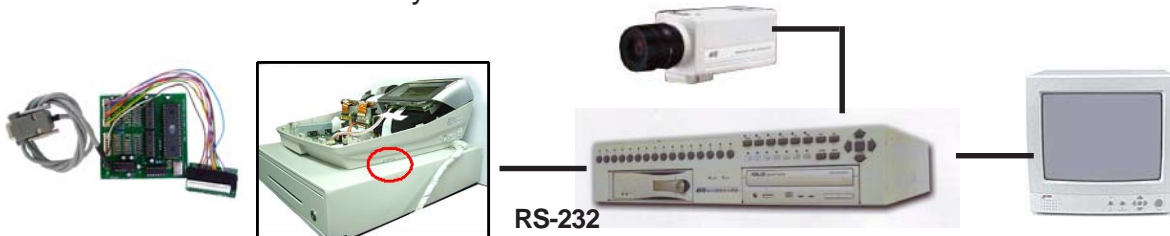
Adapters

The extensive line of AVE Adapters can convert Parallel/Centronics, IRC, Ethernet LAN, USB or PS2 to RS-232 to be delivered to the VSI-Pro or directly to the DVR.

Special Protocol

RS-232

IF or TPIF ECR PCBs

Some lower cost ECR cash registers have built in printers and very few external ports for extracting the transaction data. In these cases the AVE line of ECR PCBs are mounting internally to the ECR to convert the printer data to RS-232. This RS-232 data can be connected to the VSI-Pro or directly to the DVR.
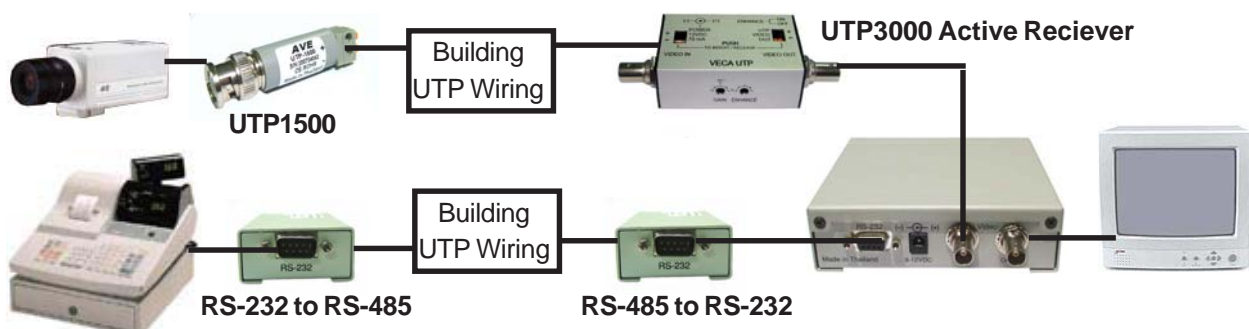

RS-232

Wireless Connections

In many POS installations the terminals are prewired and running additional cable to the interface can be expensive. In these cases sending the POS data by a Bluetooth wireless connection can solve this problem.

Bluetooth

RS-232

Structured Wiring

Most buildings are wired with telephone service using Cat 3, 4, or 5 unshielded wire. In these installations the AVE UTP line can be used to transmitter the video over these existing wires saving installation costs. For the POS / Cash Register Data the AVE RS-232 to RS-485 adapter can send up to 3000 ft without any interference.
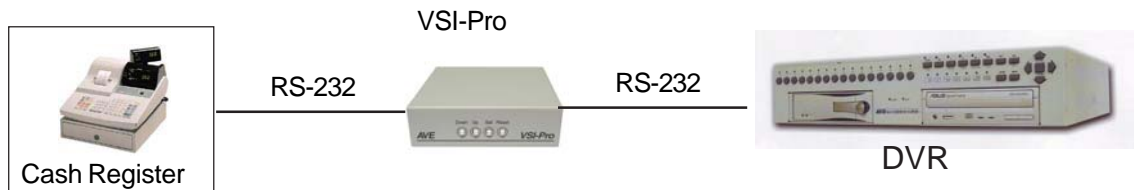

UTP3000 Active Reciever

Building UTP Wiring

UTP1500

Building UTP Wiring

RS-232 to RS-485   **RS-485 to RS-232**

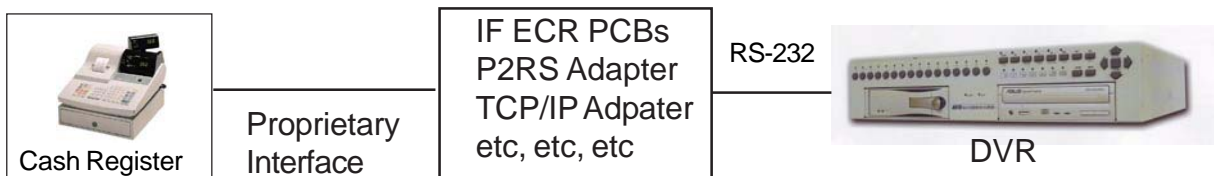# POS Retail and Banking Solutions

The AVE line of POS Cash Register and ATM Interfaces have always been compatible with 3rd party DVRs. The VSI-Pro Cash Register Interface and VSSI-Pro ATM Interface exports the transaction data in a standard readable RS-232 format. These products can connect directly to any standard DVR with an RS-232 Comport or compatible DVR configured in a network of up to 16 interfaces supporting the AVE Protocol. This brings true integrated solutions for Retail and Banking to any 3rd party DVR. With the largest compatibility list of POS terminals, Cash registers, ATMs, Scales, Coin Counters, GPS, Radar Guns, Laser Guns, Alcohol Meters, Accelerometers and Magnetic Card Readers, AVE will expand your marketing and sales to areas unreachable in the past.

VSI-Pro Cash Register Interface Direct Connection RS-232

The VSI and VSI-Pro have always had the ability to export all the filtered and formated transaction data or just exceptions to an RS-232 serial port. This data can now be read by many 3rd party DVRs which store the data with the video file. Using the text search features in the DVR the user can later search for particular transactions in question.
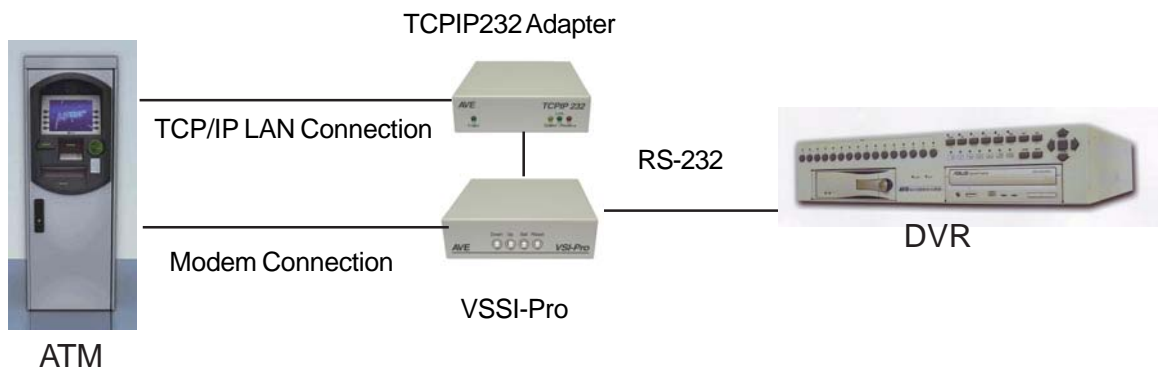

The AVE line of IF ECR Interfaces, Parallel to Serial, USB & TCP/IP adpaters along with many other special converters and adapters output data in the formated RS-232 protocol. Many DVRs can recieve this data directly without the use of a VSI-Pro.
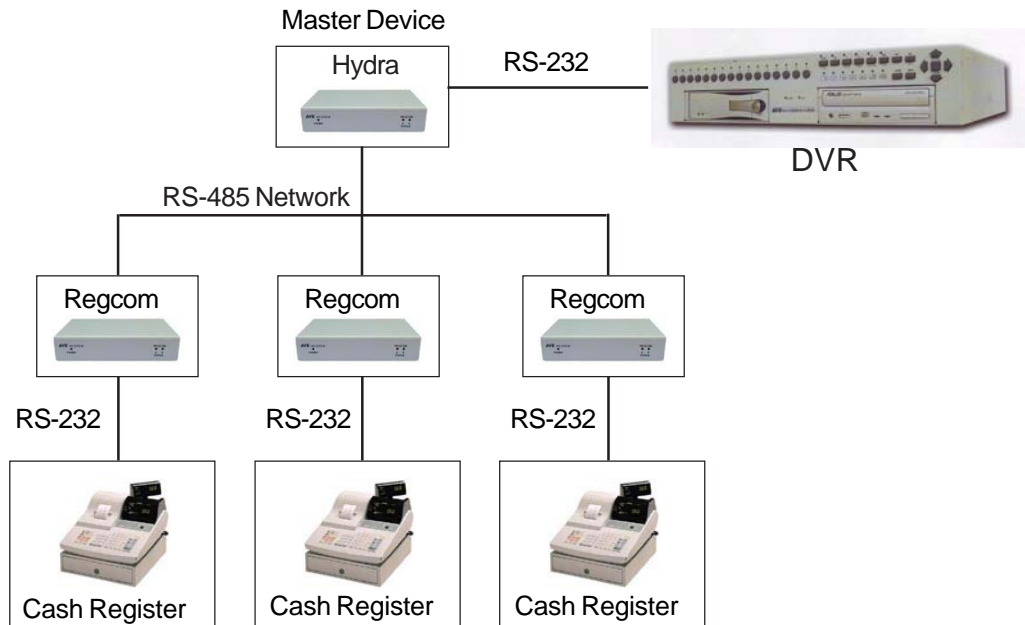

VSSI-Pro ATM Interface Direct Connection RS-232

The VSSI-Pro ATM Interface outputs RS-232 formated transaction data also in the standard RS-232 format. This device whether used stand alone for modem tapping or with the TCPIP232 Adapter for TCP/IP LAN tapping, can send this data to the RS-232 Comport of any DVR.

Regcom Networking

The Regcom is an interface device that allows the connection of multiple cash register terminals to the Hydra master unit for the purpose of transaction logging. The Regcom receives RS-232 data from a cash register, VSI-Pro, Interface Adapter, or ECR Interface card inside the cash register. It then stores this data in its internal buffer before sending it on to the master unit via the RS-485 network. The Regcom is a "slave" device. One master device can be connected to a maximum of 16 slave devices. Only one master device can exist on a single network.

Hydra

The Hydra Master unit is an interface device that allows the connection of multiple cash register terminals using the Regcom/Networker/Vnetworker slave units for the purpose of transaction logging. The Hydra receives RS-485 data from the Regcom/Networker/Vnetworker networks and converts this to an RS-232 format that DVRs or the VSI-Pro can read. The DVR must support the AVE proprietary protocol. Many 3rd party DVR protocols are already supported.
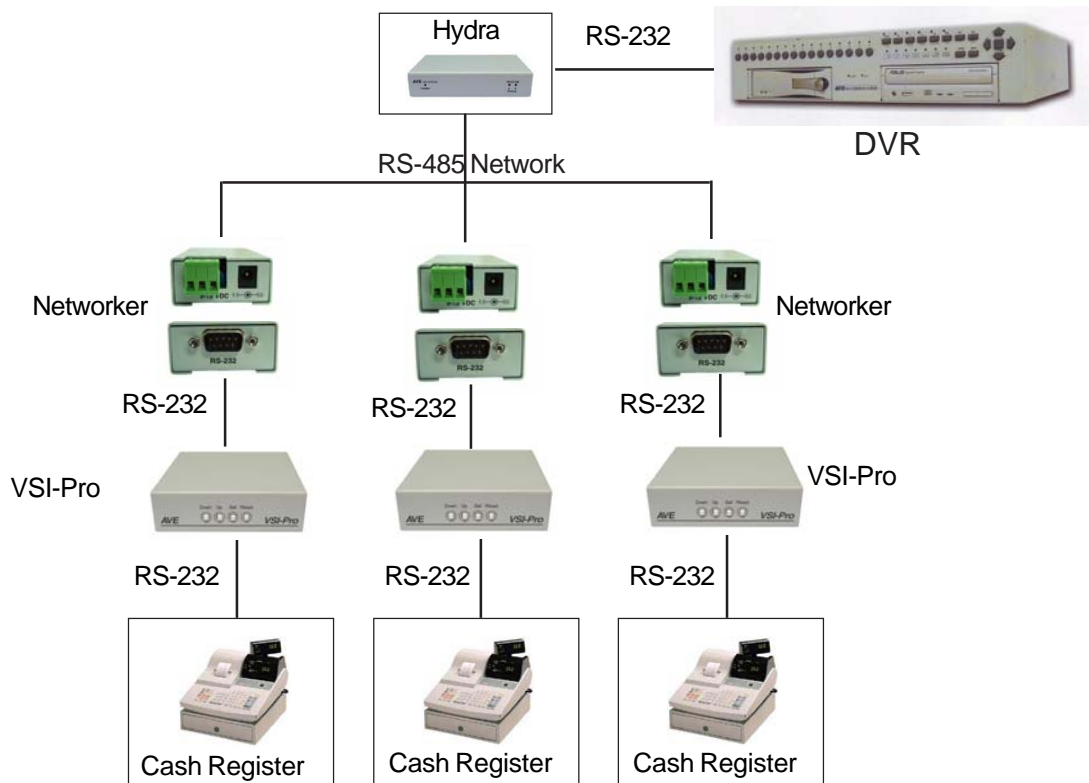
Networker Networking

The Networker can connect directly to only the VSI-Pro. The VSI-Pro then must connect with the cash register and/or optional interface adapter. The 2 conductor RS-485 network is run to each and every Networker in the system and then back to the Hydra. Each Networker must have a unique address set by its internal dipswitch corresponding to the register or camera number. The Hydra then translates this address and stores the data from the respective number to that camera number in the DVR. All the text recieved from that cash register whether being all the data or just exceptions is stored on the DVR.
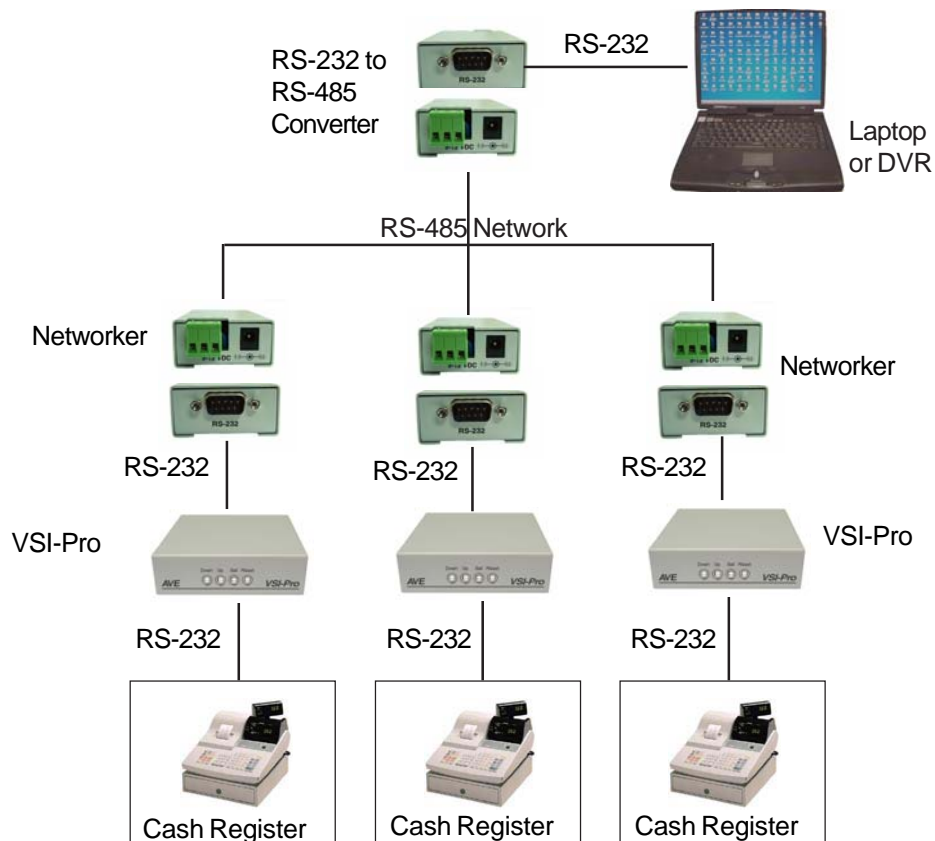
VSI / VSI+ / VSI-Pro Backward Compatibility

Since 1990 various versions of the VSI have been on the market solving cash register retail problems. Several special version are available to interface to other RS-232 devices like scales, coin counters, PLCC, gambling machines and ATMs along with countless other generic RS-232 devices. The first VSI, Version 9 had no exception processing until the release of Version 10. However these versions had the ability to output the data so are compatible with the Regcom line of networking adapters. As features increased we moved to the VSI+ Version 11, which had the first powerful set of exception processing and printing functions. This version also had hardware handshaking capability which allows it to be fully operational with the Networker and Regcom line. The introduction of the VSI-Pro Version 12 added on-screen selection of various model registers for ease of installation and supported many characters sizes for multiple units to display data on one camera view. This version also supports the Networker and Regcom products. The current VSI-Pro Version 13.XX has improved features and additional registers and the Version 13.00 supports North America cash registers and Version 13.24 supports UK and European models. All Version 13.XX VSI-Pro support the Networker, Regcom and Vnetworker products. All Version 13.XX can be upgraded to the latest Release 12. This latest software adds PC Programming capability, Firmware update externally and Vnetworker support along with Networker and Regcom compatibility.
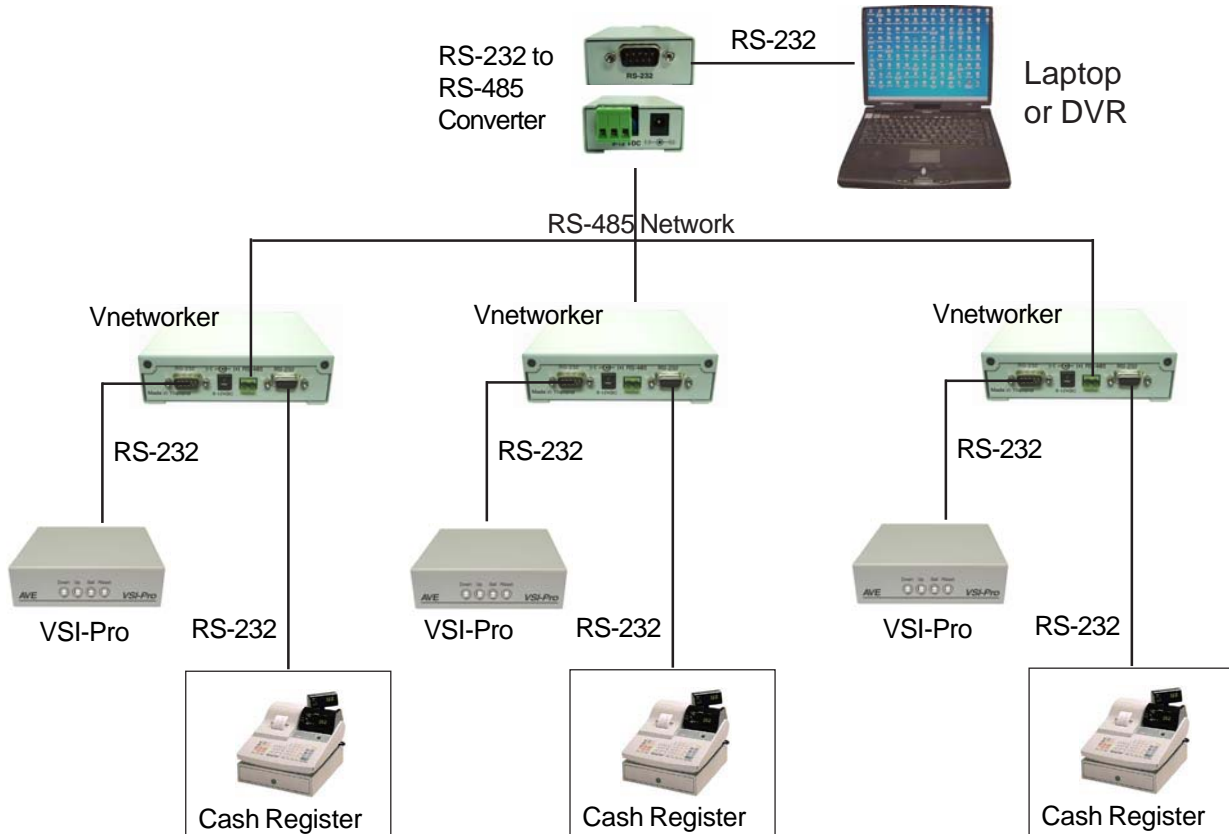
Networker Networking Connection Diagram

PC Netwoker System Configuration

The Networker connects directly to the VSI-Pro along with the cash register and/or optional interface adapter. The 2 conductor RS-485 network is run to each and every Networker in the system and then back to the PC via an RS-232 to RS-485 adapter. Each Networker must have a unique address set by its internal dipswitch corresponding to the register or camera number. The PC Windows software on the PC will control the network collecting data from each VSI-Pro in the system. The data is then stored in a log file for each VSI-Pro which can be used by other programs for databasing, downloading or printing.

Vnetworker System Configuration

The Vnetworker connects in between a VSI-Pro and the Cash Register or interface adapter via RS-232. The Vnetworker is similar to the Networker which takes the RS-232 data and puts it on a common RS-485 network and sends back to the DVR or PC. This network supports up to 64 Vnetworkers. The Vnetworker is an ehanced version of the Networker and is able to program the VSI-Pro remotely along with gathering the transaction or exception data. The VSI-Pro must be Ver. 13.00 or 13.24 and Release 12 or higher. Any VSI-Pro Ver. 13.00 or 13.24 can be upgraded with a uP software change for the hardware of the VSI-Pro remains the same.

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