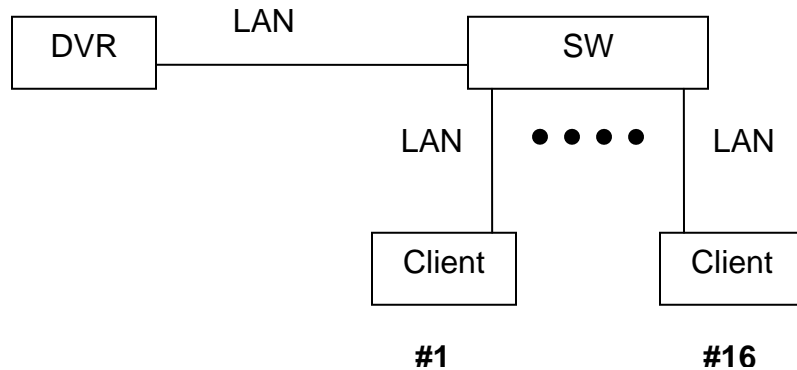
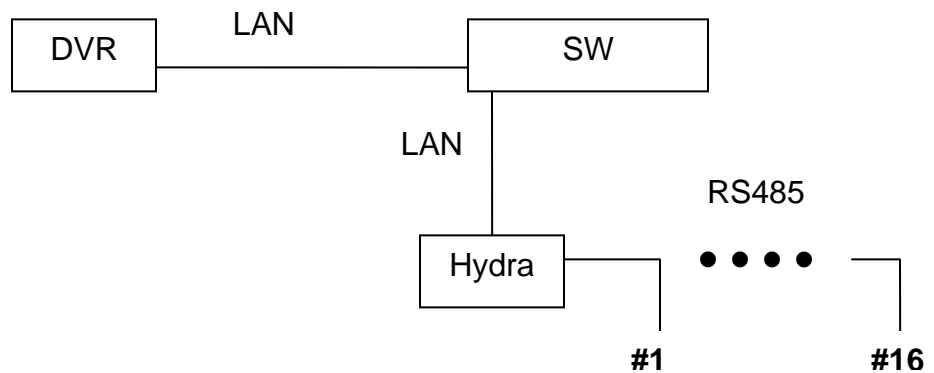


**AVE DVR Internet Port Text Insertion**

The DVR has a multiple ports for receiving data packet from 16 TCPIP232 Clients.



TCPIP232 Client Hydra mode connects up to 16 AVE RS485 Network Devices and sending internet packet to the DVR.



**Packet Output**

There are 4 Types of internet packet output ASCII+CR, ASCII+CRLF, VSI-ADD and VNET.

**Sending TCP or UDP data format**

TCPIP232 Client Server send data packet with TCP/IP format.

Application Layer	→	ASCII+CR, ASCII+CRLF, VSI-ADD, VNET
Transport Layer	→	TCP or UDP
Internet Layer	→	IP
Link Layer	→	Ethernet

## 1. Application Layer

TCPIP232 Client Server sends message to the host that depending on Packet Output format.

### 1.1 ASCII+CR

ASCII Text is end with Carriage return

Ex Packet output of "NO SALE"

'N' 0x4E  
'O' 0x4F  
' ' 0x20  
'S' 0x53  
'A' 0x41  
'L' 0x4C  
'E' 0x45  
CR 0x0D

User data = N[0x4E]O[0x4F] ' ' [0x20]S[0x53]A[0x41]L[0x4C]E[0x45]CR[0x0D]

### 1.2 ASCII+CRLF

ASCII Text is end with Carriage return and line feed

Ex Packet output of "NO SALE"

'N' 0x4E  
'O' 0x4F  
' ' 0x20  
'S' 0x53  
'A' 0x41  
'L' 0x4C  
'E' 0x45  
CR 0x0D  
LF 0x0A

User data = N[0x4E]O[0x4F] ' ' [0x20]S[0x53]A[0x41]L[0x4C]E[0x45]CR[0x0D]  
LF[0x0A]

### 1.3 VSI-ADD

Starting with Escape , Address , Text and end with Carriage return

Ex Packet output of “NO SALE” from Address NO or ID NO 3.

**ESC** 0x1B  
**ADD** 0x03  
**'N'** 0x4E  
**'O'** 0x4F  
**' '** 0x20  
**'S'** 0x53  
**'A'** 0x41  
**'L'** 0x4C  
**'E'** 0x45  
**CR** 0x0D

User data = **ESC**[0x1B]**ADD**[0x03]**N**[0x4E]**O**[0x4F] '  
[0x20]**S**[0x53]**A**[0x41]**L**[0x4C]**E**[0x45]  
**CR**[0x0D]

### 1.4 VNET

Starting with Start of heading , 2 bytes of ASCII address , Start of Text , Text ,  
Carriage return , Block Check Character and End Text

Ex Packet output of “NO SALE” from Address NO or ID NO 2.

**SOH** 0x01  
**'0'** 0x30  
**'2'** 0x32  
**STX** 0x02  
**'N'** 0x4E  
**'O'** 0x4F  
**' '** 0x20  
**'S'** 0x53  
**'A'** 0x41  
**'L'** 0x4C  
**'E'** 0x45  
**CR** 0x0D  
**BCC** 0x37 Block Check Character is the Exclusive OR  
the previous message character after **STX** , excluding **ETX**  
**ETX** 0x03

User data = **SOH**[0x01]**'0'**[0x30]**'2'**[0x32]**STX**[0x02]**N**[0x4E]**O**[0x4F] '  
[0x20]**S**[0x53]  
**A**[0x41]**L**[0x4C]**E**[0x45]**CR**[0x0D]**BCC**[0x37] **ETX**[0x03]

## 2. Transport Layer

User Data(Application Layer) is added TCP or UDP header.

### 2.1 TCP segment format

<b>TCP Header</b>	User Data
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#### TCP Header

Source Port Address 16 bits				Destination Port Address 16 bits				
Sequence Number 32 bits								
Acknowledgment Number 32 bits								
HLEN 4 bits	Reserved 6 bits	U R G	A C K	P S H	R S T	S Y N	F I N	Windows Size 16 bits
Checksum 16 bits				Urgent pointer 16 bits				
Options & Padding								

### 2.2 UDP datagram format

<b>UDP Header</b>	User Data
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#### UDP Header

Source Port Address 16 bits	Destination Port Address 16 bits
Total length 16 bits	Checksum 16 bits