



Hall Technologies • 1234 Lakeshore Dr Suite #150 Coppell, TX 75019 • halltechav.com

## FHD264 - & FHD264-R

### Application Notes

Version: 1.1

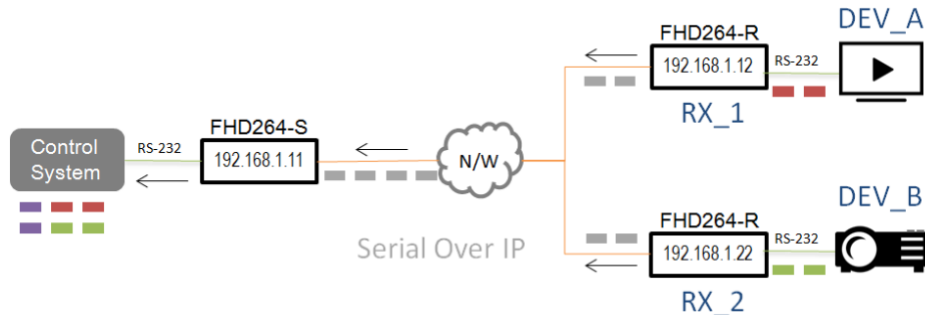
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**FHD264-S V1.1** Firmware Includes new Mode called [Packet Mode](#)

**FHD264-R V1.1** Firmware Includes new Mode called [Message Complete Delay](#)

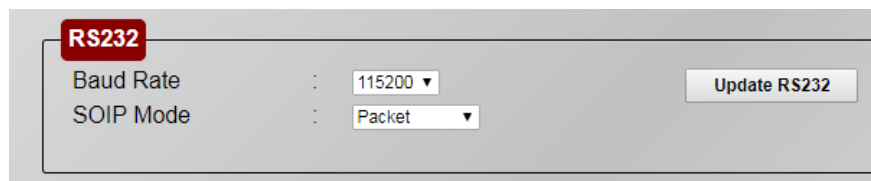
**Packet Mode**

Packet Mode in the Sender (TX) is used to differentiate Serial Over IP (SOIP) data from multiple Receivers (RX) in a multicast group. In **Pass through Mode** (Default), the control system at the TX end cannot differentiate the bytes coming from multiple receivers.



Enabling **Packet Mode** at TX will append a [header](#) to the received payload from a receiver, which allows the Control System to parse (Differentiate) the responses from the SOIP devices attached to the receivers.

Packet Mode can be enabled form the WEB-GUI of the Sender



**Header format**

**Header = [IP Address of the receiver: Payload Size]Payload**

Total Header Size = **11 Bytes**

Header Start (1 Byte)	"[" or 0x5B
IP Address of the Receiver (4 Bytes)	Receivers IP address in Little Endean <b>Eg:</b> 0C01A8C0 12.1.168.192 (192.168.1.12)
Field Separator (1 Byte)	":" or 0x3A
Payload Size (4 Bytes)	Number of bytes that follow Header End
Header End (1 Byte)	"]" or 0x5D

Payload	Bytes from the receiver
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**Example-1:**

From the above picture, there are two serial devices (DEV\_A, DEV\_B) connected to two FHD264-R receivers (RX\_1, RX\_2) via RS-232 as shown in the figure operating at 115200 Baud.

DEV\_A connected to RX\_1 (192.168.1.22) sends:

ASCII	HEX
I am Projector<CR><LF>	49 61 6D 20 50 52 4F 4A 45 43 54 4F 52 0D 0A

DEV\_B connected to RX\_2 (192.168.1.12) sends:

I am SAMSUNG TV<CR><LF>	49 61 6D 20 53 41 4D 53 55 4E 47 20 54 56 0D 0A
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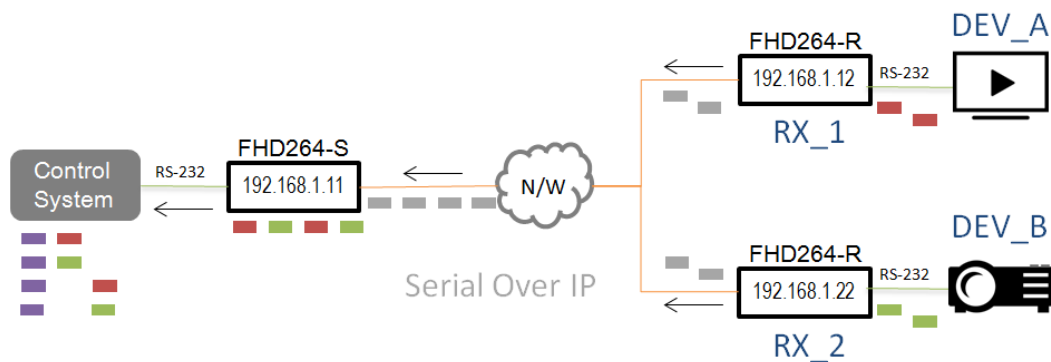
The serial out at the **Sender** (TX) is as follows:

Passthrough	Packet Mode
49 61 6D 20 53 41 4D 53 55 4E 47 20 54 56 0D 0A 49 61 6D 20 50 52 4F 4A 45 43 54 4F 52 0D 0A	<b>5B 0C 01 A8 C0 3A 00 00 00 10 5D</b> 49 61 6D 20 53 41 4D 53 55 4E 47 20 54 56 0D 0A <b>5B 16 01 A8 C0 3A 00 00 00 0F 5D</b> 49 61 6D 20 50 52 4F 4A 45 43 54 4F 52 0D 0A

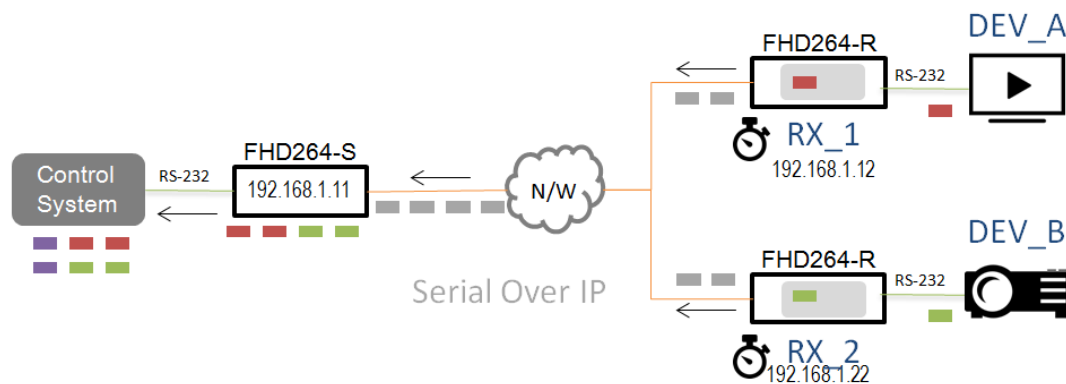
### Message Complete Delay (MCD)

MCD is a time parameter in milliseconds, which tells the Receiver to accumulate the Serial data received from the Serial Devices in a buffer before sending it to sender. In other words, MCD allows the receiver to save a message in a buffer before sending to the Sender.

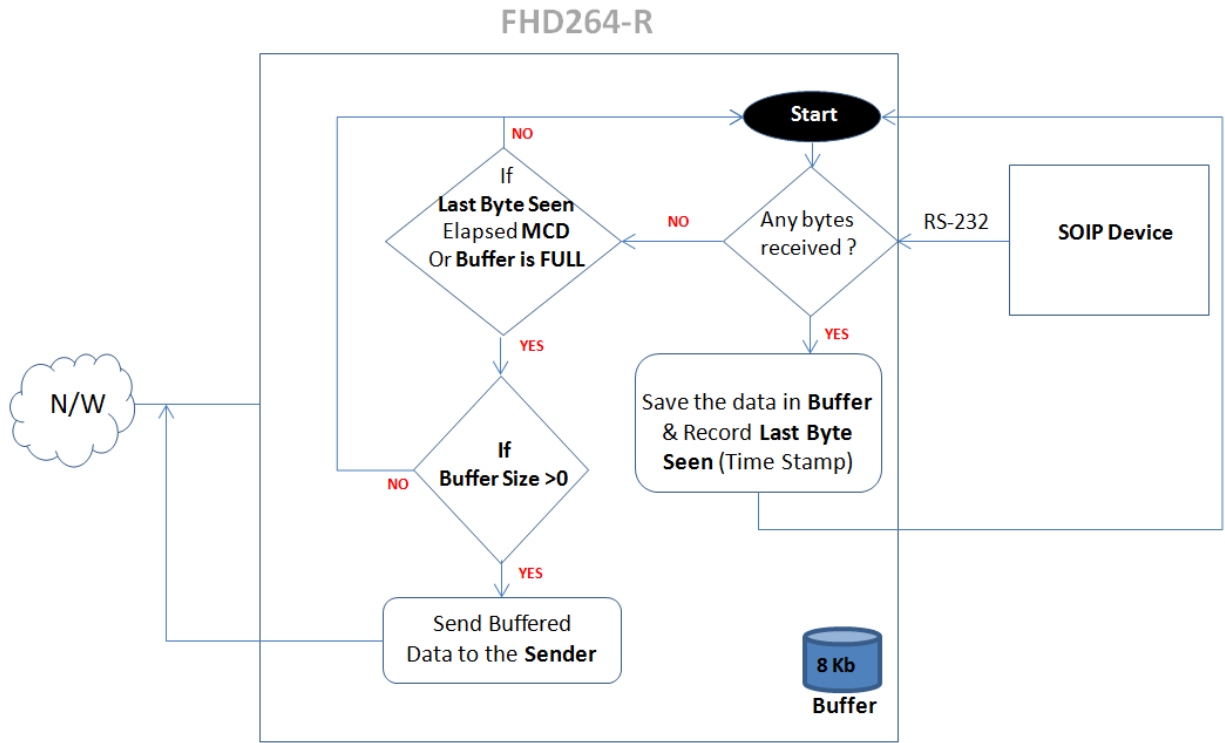
When MCD = 0, a Receiver will send the data received from the serial devices instantaneously. If the response includes a **long string** or **more than one receiver has data at the same time**, there is a possibility of receiving the data at the Sender as discrete samples. In such cases, the control system needs to integrate the samples back using headers by enabling [Packet Mode](#) in the Sender.



MCD at the Receiver can reduce the load on control system caused due to parsing by aggregating the data from the serial device in a buffer and send it to the sender as a complete response.



**Flow Chart:**



MCD value can be adjusted from **0 - 10 Sec** and the Buffer can hold up to **8Kb** of data.

MCD value can be changed from Receivers WEB-GUI:

