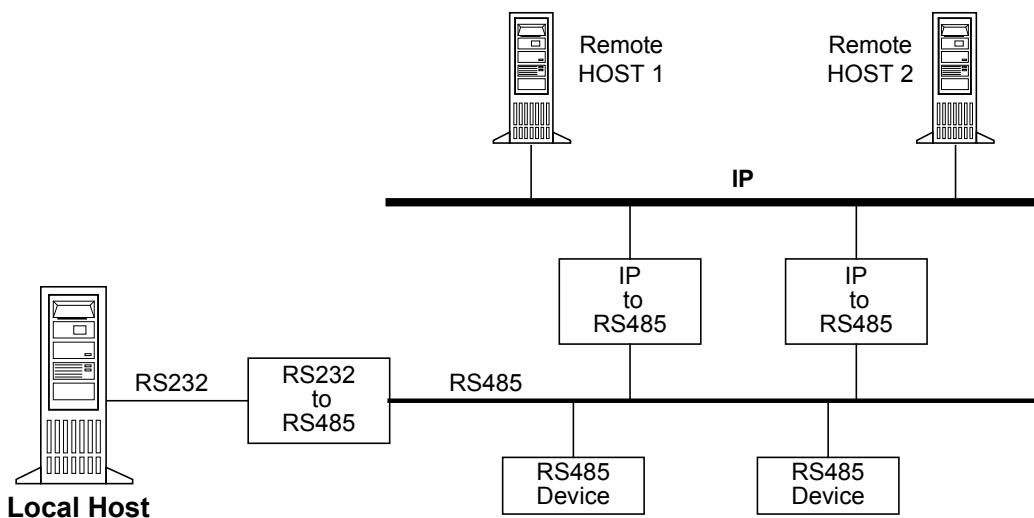


## How to use APORT201 in your control environment

Traditionally we may use RS485 port in host (may be RS485 serial port in PLC or one PC installed RS485 serial port) to connect with RS485 device. If there were no RS485 port in host (standard PC may have RS232 COM port only), then we may use one RS232 to RS485 converter box to connect with RS485 device. Now IP network is more popular and cost acceptable. So we may use Ethernet serial device server box to connect with RS485 device. If we needed two hosts for auto-backup purpose, then we may need two Ethernet serial device server boxes for two hosts. Every Ethernet serial device server box will be used by one of host. Now you can use one APORT201 box to support one local host and two remote hosts.



APOINT201 box can support one local RS232 pass-through port and one GROUND isolated RS485 port. We can connect external RS485 device to RS485 port. Any data received from RS485 port will be transmitted to local pass-through RS232 port and two remote virtual COM ports. Any data received from local pass-through RS232 port will be transmitted to RS485 port only. Any data received from remote virtual COM port will be transmitted to RS485 port only.

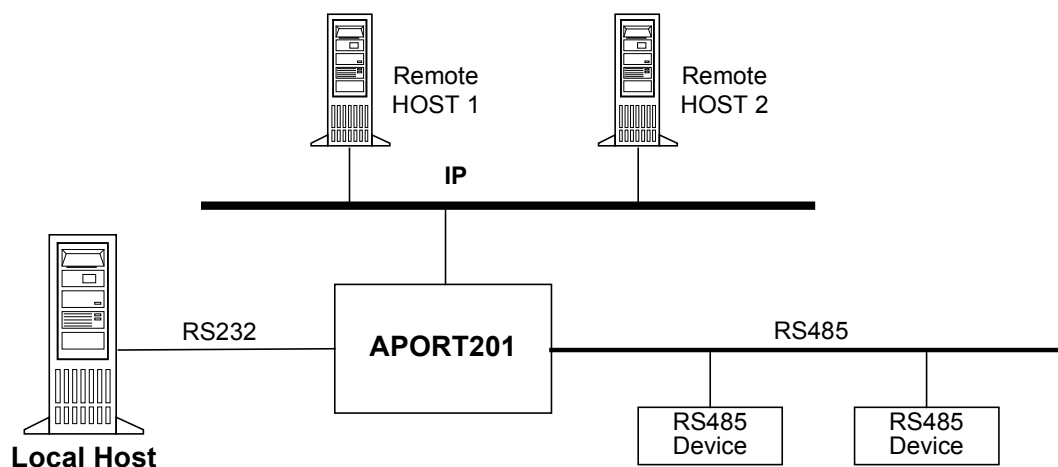
Traditionally we may have one PC to connect RS232 cable between RS232 COM port and one RS232 to RS485 converter box for RS485 device access. We may need one Ethernet serial device server to connect with RS485 device for remote PC to access. When you need two PCs to access RS485 device in remote site, you need two Ethernet serial device server boxes. In this application environment we may have one local PC in field for maintenance purpose. We may use one PC in remote site for normal control function.

We may have another PC in remote site for abnormal condition back up purpose. In this application structure we may have two problems. The first one is RS485 loading in RS485 network. Because we use one RS232 to RS485 converter box and two Ethernet serial device server boxes, so we have three RS485 loading in RS485 network. The other one is RS485 data is different in each box. It is due to we may have different RS485 interface IC characteristic in RS232 to RS485 converter box and Ethernet serial device server box.

Now we can use APORT201 box to solve this condition. We just need one RS485 loading in RS485 network. We have same RS485 received data in local host and remote host. In any host we can access RS485 device. And all hosts will receive same RS485 device response data. So we can record such response data in any host. When we have problem in any host, we can check data recorded in each host. Then it is easy for us to analyze such data to find possible problem.

From cost consideration point of view we can use one APORT201 box to replace one RS232 to RS485 converter box and two Ethernet serial device server boxes.

In APORT201 box we have two UART controllers to connect with serial port 2 (RS485 port). Each UART controller will be used as virtual COM port in remote PC. So you can have two UART controllers for two PCs and each PC may have one virtual COM port. Or you can have two UART controllers for one PC and you can have two virtual COM ports in this PC. Now we can have virtual COM port in remote PC to connect with RS485 device via IP network. It is same as standard COM port in local PC to connect with RS485 device.



For local PC we can connect one RS232 cable between standard COM port and serial

port 1 (RS232 port) of APORT201 box. Now APORT201 box is worked as RS232 (serial port 1) to RS485 (serial port 2) converter. Now you can have same COM port application software in local PC and remote PC to access RS485 device. You just need to develop and verify your COM port application software in local PC. When it is ready to use for such COM port application software, you can run such software in local PC and remote PC (via IP network) without problem. In traditional structure you may have RS232 to RS485 converter box and Ethernet serial device server box to have different RS485 characteristic. So you may have different possibility for local PC and remote PC.

Now you can find APORT201 box can save your cost and offer good performance. The other possible problem is latency time for virtual COM access and standard COM access. But this latency time problem is existed in all Ethernet serial device server box. Software engineer must take care this latency time in their application software to access RS485 device via IP network. It is not our topic in this application note. We are focus in cost and simple structure.