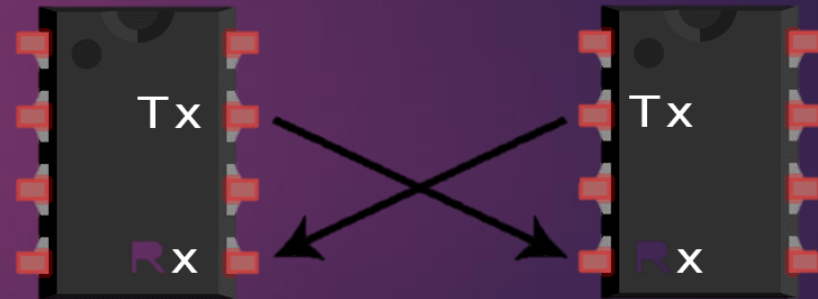


UART

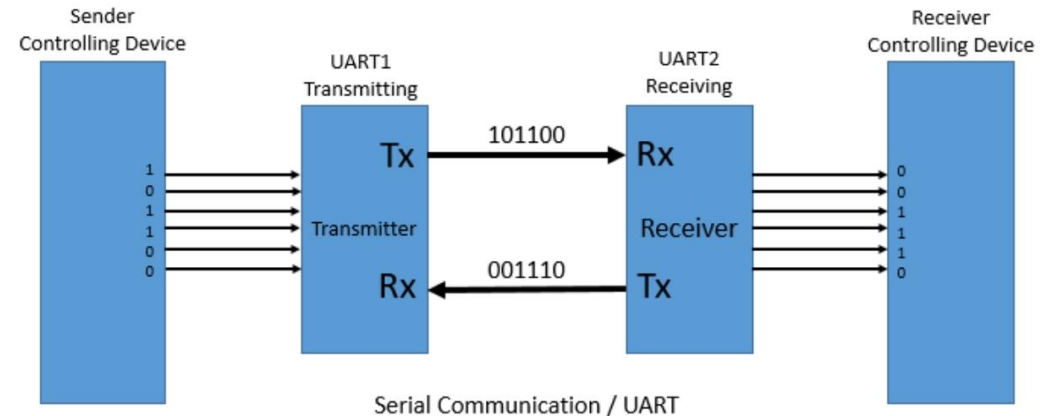
UNIVERSAL ASYNCHRONOUS RECEIVER-TRANSMITTER



About UART

- Universal asynchronous receiver-transmitter
- Purpose :
 - Communicate
 - Debugging
 - Controlling
- Uart pins : TX , RX , GND

www.cselectricalandelectronics.com



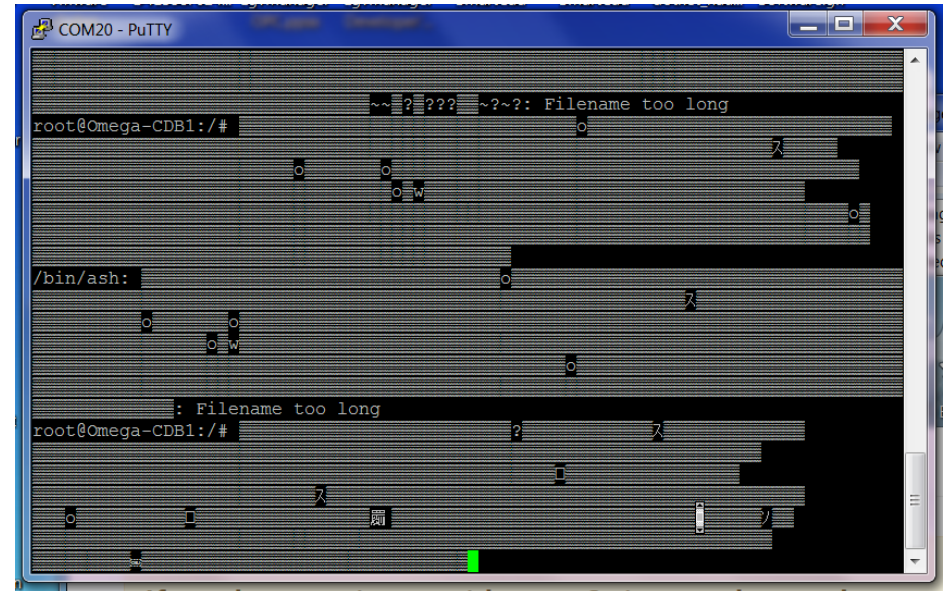
identify

- GND : always connected to hardware GND
- TX : have higher voltage than TX
- RX : lower voltage
- V : voltage between it and GND is :
 - 3.3 or 5v according to the device



Access UART

- baud rate : both devices must have the same rate
- Common tools :
 - minicom , screen , putty ,Arduino ide



debugging

- check available commands
- Decide what to do
- Can i gain root shell ?

```
BusyBox v1.23.2 (2018-02-22 10:03:21 MSK) built-in shell (ash)
```



```
-----  
CHAOS CALMER (Chaos Calmer, r49635)  
-----
```

```
* 1 1/2 oz Gin           Shake with a glassful  
* 1/4 oz Triple Sec      of broken ice and pour  
* 3/4 oz Lime Juice      unstrained into a goblet.  
* 1 1/2 oz Orange Juice  
* 1 tsp. Grenadine Syrup  
-----
```

```
root@IPCam_HI3518Ev1:/# ip a  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue  
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
   inet 127.0.0.1/8 scope host lo  
       inet6 ::1/128 scope host  
           valid lft forever preferred lft forever  
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000  
   link/ether 00:00:23:34:45:66 brd ff:ff:ff:ff:ff:ff  
   inet 192.168.1.10/24 brd 192.168.1.255 scope global eth0  
       inet6 fe80::200:23ff:fe34:4566/64 scope link  
           valid lft forever preferred lft forever  
3: sit0: <NOARP> mtu 1480 qdisc noop  
   link/sit 0.0.0.0 brd 0.0.0.0  
4: br-vlan: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue  
   link/ether 00:00:23:34:45:66 brd ff:ff:ff:ff:ff:ff  
   inet 172.28.200.80/25 brd 172.28.200.127 scope global br-vlan  
       inet6 fe80::200:23ff:fe34:4566/64 scope link  
           valid lft forever preferred lft forever  
5: eth0.490@eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master br-vlan  
   link/ether 00:00:23:34:45:66 brd ff:ff:ff:ff:ff:ff  
root@IPCam_HI3518Ev1:/#
```

