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# INTRODUCTION.

- ❑ **RS-232** (Recommended Standard 232).
- ❑ It is basically a interface standards.
- ❑ It is commonly used in computer serial ports.
- ❑ The standard defines the electrical characteristics and timing of signals.
- ❑ The current version of the standard is *TIA-232-F*, issued in 1997.



# History.

- **RS-232** was first introduced in **1962**.
- For many years, an RS-232-compatible port was a **standard feature** for serial communication.
- The standard continued to be revised and **updated** by the Electronic Industries Alliance and since 1988 by the Telecommunications Industry Association (TIA).
- The C revision of the standard was issued in August **1969**.



**RS-232 Port.**



# STANDARD.

- ❖ In RS-232, user data is sent as a time-series of bits.
- ❖ Both synchronous and asynchronous transmissions are supported by the standard.
- ❖ RS-232 devices may be classified as Data Terminal Equipment (DTE) or Data Communication Equipment (DCE), this defines that each device which wires will be sending and receiving each signal.
- ❖ DTE refers to terminals and computers that sends and receives data.
- ❖ DCE refers to communication equipment, such as modems, that are responsible for data transferring.

# Limitations of the Standard.

- The limited transmission speed, relatively large voltage swing, and large standard connectors motivated development of the universal serial bus(USB) which has displaced RS-232.
- Multi-drop connection among more than two devices is not defined.
- Also multi-drop have limitations in speed and compatibility.

# DIFFERENT TYPES OF RS-232 CABLES.





# RS-232 used in.....



RS232 →  
GPRS  
TCP/IP  
Modem

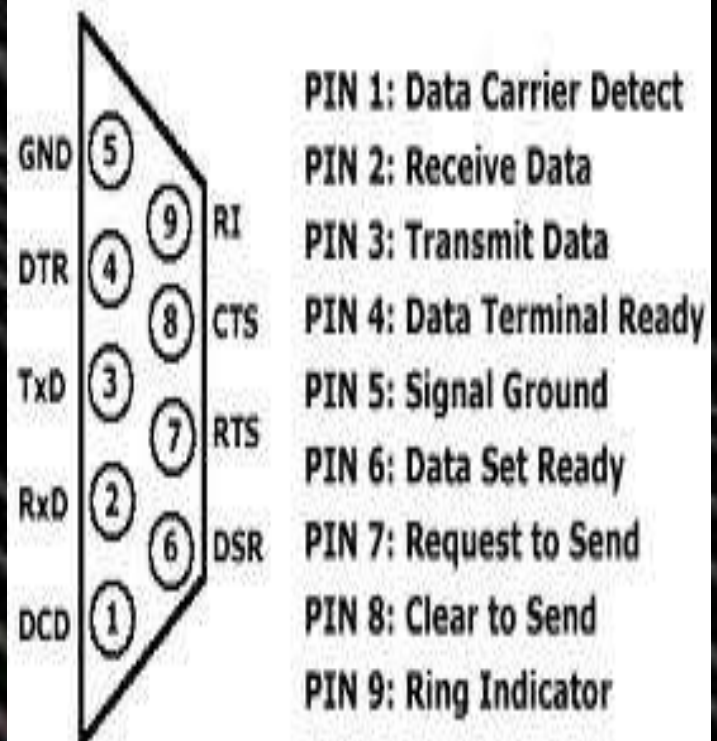


# RS-232 pins.

## RS232 Pinout on DB25



## RS-232 DB-9 Male Pinout

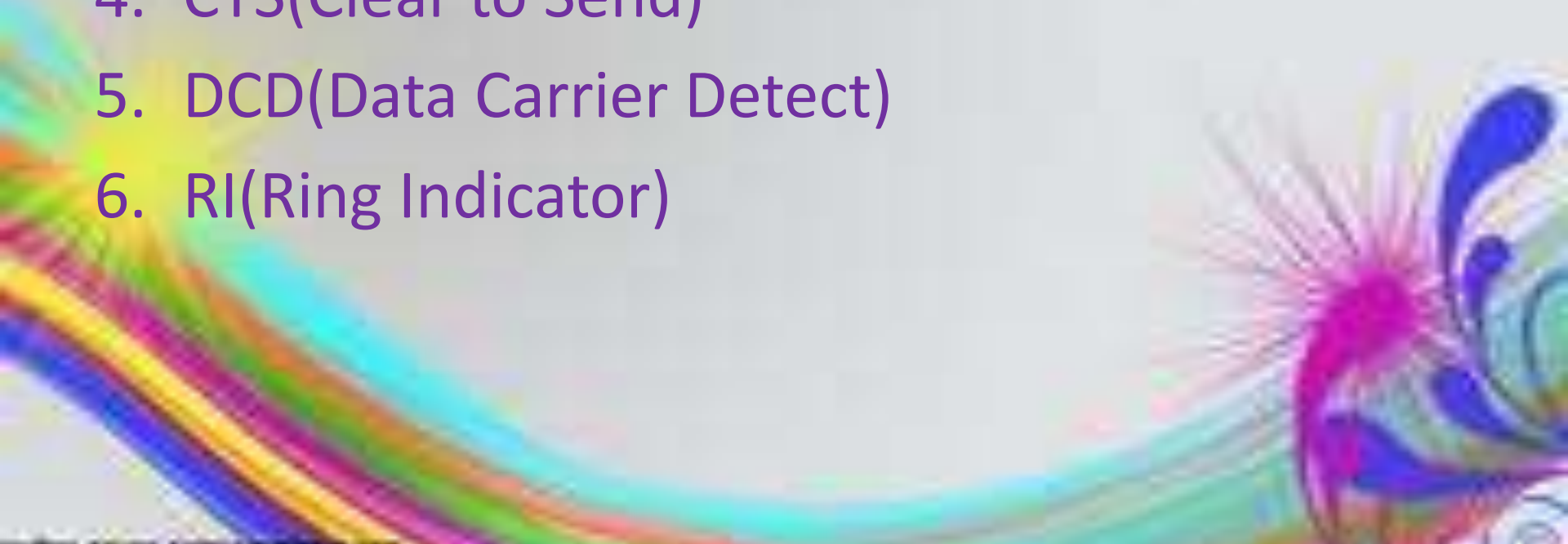


# Examining RS-232 handshaking signals.

- ✓ To ensure fast and reliable data transmission between two devices, the data transfer must be coordinated.
- ✓ Many of the pins of RS-232 connector are used for handshaking signals.

# PINS OF RS232

1. DTR(Data Terminal Ready)
2. DSR(Data Set Ready)
3. RTS(Request to Send)
4. CTS(Clear to Send)
5. DCD(Data Carrier Detect)
6. RI(Ring Indicator)





# REFERENCES.

- 1) Muhammad Ali Mazidi & Janile Gillispie Mazidi.
- 2) [www.wikipedia.com](http://www.wikipedia.com)
- 3) [www.yahooanswers.com](http://www.yahooanswers.com)

Thank you ...