

G-Ware and RS-232 cabling for communication with the XAP

Introduction

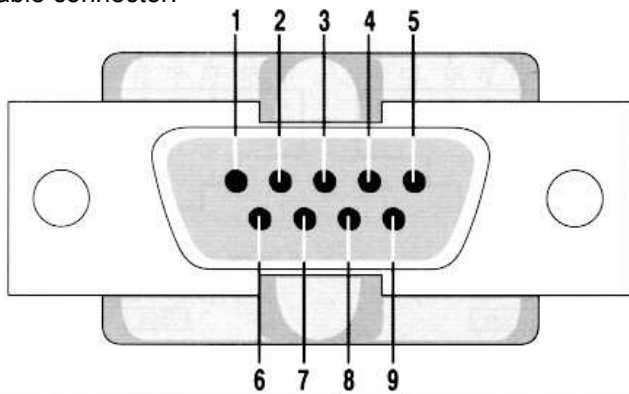
This document explains the RS-232 communication elements used by G-Ware and the XAP for data transfer.

Description

This document explains the communication protocols and pin configurations for RS232 connections as used in serial communication with G-Ware and the XAP products.

RS-232 Pin Configuration

This diagram details the standard pin configuration for RS-232 serial communications as viewed on the cable connector.



Pin	Signal	Pin	Signal
1	Data Carrier Detect	6	Data Set Ready
2	Received Data	7	Request to Send
3	Transmitted Data	8	Clear to Send
4	Data Terminal Ready	9	Ring Indicator
5	Signal Ground		

Pin Descriptions

Pin 1	Data Carrier Detect	This is used in modem configurations to detect a connect/disconnect carrier signal.
Pin 2	Data Receive	In this case it is the information requested or retrieved from the XAP system.
Pin 3	Data Transmit	In this case this is configuration information being transmitted from G-Ware to the XAP system.
Pin 4	Data Terminal Ready (DTR)	This is signaling from the XAP saying it is ready to receive data.
Pin 5	Ground	Signal Ground that is common between the data terminal (XAP) and the PC.
Pin 6	Data Set Ready (DSR)	This is signaling from the PC (G-Ware) that is ready to send data.
Pin 7	Request to Send	Prepares the Data Terminal (XAP) to receive data from the DCE (PC with G-Ware).
Pin 8	Clear to Send	Response from the Data Terminal saying it is ready to receive data from the DCE.
Pin 9	Ring Detect	Used with a modem to detect an incoming connection attempt.

Baud Rate and Flow Control

Baud rate refers to the rate at which data is transferred between the G-Ware software and the XAP unit. It is similar to bit rate.

Flow control is used to manage the data transfer to and from the data source (G-Ware) and the equipment. The flow control used by the XAP is called Hardware flow control or Hardware handshaking. This uses pins 7 and 8 for the Ready to Send (RTS) and Clear to Send (CTS) signaling. The XAP system can also be setup with flow control off to allow for communication with an external control system using a cable with pins 2, 3 and 5.

Serial Communication and G-Ware

When a G-Ware session is initiated, the software will first signal Data Set Ready (DSR) to check for terminal equipment at the other end of the communication link. If there is a device there, in this case an XAP unit, that unit will respond with a Data Terminal Ready (DTR) signal. Once communication is established the software and hardware check for matching baud rate and whether flow control is enabled. If the DSR and CTS lines are low G-Ware will not be able to communicate with the unit if flow control is enabled in the software. Once these parameters have been set the data can then be exchanged between G-Ware and the XAP unit. Throughout the communication session G Ware will monitor the CTS and DSR signaling that may indicate a loss of hardware connection.