1 Overview

The Ciholas Serial Protocol (CSP) provides a method of communication between devices over serial link. Devices such as those connected to the CUWB USB Driver can take an Ethernet packet and convert it to a Serial CSP packet or vice-versa. These packets will include IP information such as IP address and port in order to allow the devices to know where the data needs to be sent.

> This Ciholas Data Protocol is only for v5.0 CUWB Version. The v5.0 CDP Version is not compatible with older databases or legacy Ciholas hardware. Legacy documentation is available in our legacy area.

2 Data Format

2.1 Endianness

All CSP numerical fields of length 2, 4, and 8 bytes are transmitted using little-endian format. **NOTE: CSP does not utilize network byte order.** The CSP format utilizes little-endian format in order to reduce overhead and complexity when transmitting or receiving packets. The overall effect is decreased processor usage as well as increasing confidence for developers through eliminating the need to byte swap data before usage.

CSP fields containing ASCII strings are not byte-swapped.

2.2 CSP Packet Structure

A CSP Packet is made up of a CSP Packet Header followed by one or many CSP Data Items.

2.3 CSP Packet Header

Field Name	Byte Length	Type	Description
MARK	4	uInt32	The 4 byte magic word (0x30505343 in little endian).
TYPE	2	uInt16	Type of Data
LENGTH	2	uInt16	The length of the data portion of the packet.
DATA CHECKSUM	4	uInt32	The DCS calculation of the Protocol Header and Data.
HEADER CHECKSUM	4	uInt32	The DCS calculation of the above header items.

3 Known Data Items vs Unknown Data Items

CSP Streams may contain data items not documented here. These data items should be skipped over in case there are known data items appearing later in the same CSP packet.

4 Commonly Used Data Types

4.1 0x0001 - ASCII

This data type is used to transmit an ASCII string.

Field Name	Byte Length	Type	Description
ASCII String	X	str	The ASCII string to send. Must end with a newline or carriage return character.

4.2 0x0002 - Keep Alive

This data type is a keep-alive message that uses the CSP version as the payload.

Field Name	Byte Length	Type	Description
CSP Version	1	uInt8	The CSP version being used to send this packet.

4.3 0x0101 - UDP CDP Header

This data type used when sending CDP data over a CSP serial connection.

Field Name	Byte Length	Type	Description
IP	4	uInt32	The UDP IP Address. This can either be a source address if leaving a CUWB USB device or a destination address if coming in from a CUWB USB device.
PORT	2	uInt16	The UDP port number. This can either be a source port if leaving a CUWB USB device or a destination port if coming in from a CUWB USB device.
DATA	X	struct	The CDP packet, including CDP headers and data items. See CDP for more details.

5 Revision

Version	Date	Change Description
5.0.2	2026-04-03	Minor documentation updates
5.0.1	2025-10-31	Fixing broken links
5.0.0	2025-09-15	Initial Preliminary Release, compatible with 300 series devices