



OTI - On Track Innovations Ltd.

UNO-8 G2 Specification

Version 0.6

Product Name: UNO-8

Model Name: SATURN 8700 G2

NOTE: Preliminary version, final product specifications may be different.

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Revision History

Version	Description	Date
0.3	First draft	19-Feb-2024
0.4	Product name set to UNO-8 G2 Updated Software and hardware specifications chapter Updated Interfaces and Cable chapter Added Part Numbers chapter	01-Dec-2024
0.5	Updated regulatory specification	23-Apr-2025
0.6	Removed optional features	05-Jun-2025

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1 Introduction

This document details the product specifications for 'Saturn 8700 G2' (UNO-8 G2) Contactless EMV reader.

2 Software and hardware specifications

2.1 HW Specifications

Item	Specification												
Power	USB Powered: 5V DC Vin: 8-36V DC 5W peak												
CPU	Arm® 32-bit Cortex®-M33 with TrustZone® and enhanced security features												
CPU Speed	160Mhz												
CPU memory	Flash – 2MB RAM – 768KB												
External memory	Flash - 8MB												
Host comms	USB 2.0 FS UART RS2322/TTL												
Contactless EMV	Full NFC support												
Security	- Secure firmware upgrade - 2 AES coprocessors including one with DPA resistance - Public key accelerator, DPA resistant - True random number generator, NIST SP800-90B compliant												
Audio	Speaker												
LEDs	4 RGB for EMV indicators (top row) +1 RGB for center logo												
Buttons	3 buttons (optional)												
Temperature	-25°C to 70°C												
Humidity	Humidity (non-condensing): 10% – 90%												
Water resistance	IPx5												
Durability	IK07												
Connectors	USB-Mini Main connector												
SAM	2 x micro SAM (3FF)												
Mounting	UNO-8 Compatible (PM and FM)												
Dimensions	UNO-8 Compatible: <table><tr><td></td><td>Height [mm]</td><td>Width [mm]</td><td>Depth [mm]</td></tr><tr><td>Panel Mount (PM)</td><td>78.6</td><td>61.0</td><td>21.3</td></tr><tr><td>Flush Mount (FM)</td><td>85.4</td><td>67.8</td><td>21.3</td></tr></table>		Height [mm]	Width [mm]	Depth [mm]	Panel Mount (PM)	78.6	61.0	21.3	Flush Mount (FM)	85.4	67.8	21.3
	Height [mm]	Width [mm]	Depth [mm]										
Panel Mount (PM)	78.6	61.0	21.3										
Flush Mount (FM)	85.4	67.8	21.3										
Regulatory	RoHS, WEEE, FCC, CE, CE-RED, NRTL Certification												

2.2 SW Specifications

Item	Specification
OS	FreeRTOS
Applications	OTI modular EMV
API	OTI Host-PCD Protocol
Remote update	Secured remote update
Configuration	File based, FAT32 Accessible via Host-PCD protocol or directly via USB MSD
EMV architecture	Modular – supporting derivative submission
EMV kernel	EMV Book A&B EMV Book C Kernel 2 (MasterCard) EMV Book C Kernel 3 (Visa) EMV Book C Kernel 4 (Amex) EMV Book C Kernel 5 (JCB) EMV Book C Kernel 6 (Discover) EMV Book C Kernel 7 (UPI) Transit mode supported
Non EMV kernels	Interac Flash Girocard
Closed loop	Mifare classic / ultralight / DESFire Vicinity (ISO 15693) Card emulation Path-through mode support
Security	DUKPT (Derived Unique Key Per Transaction) according to ANSI X9.24

3 Dimensions

UNO-8 G2 is mechanically compatible with UNO-8 and support PM (On Panel Mounting) and FM (Flash Mounting)

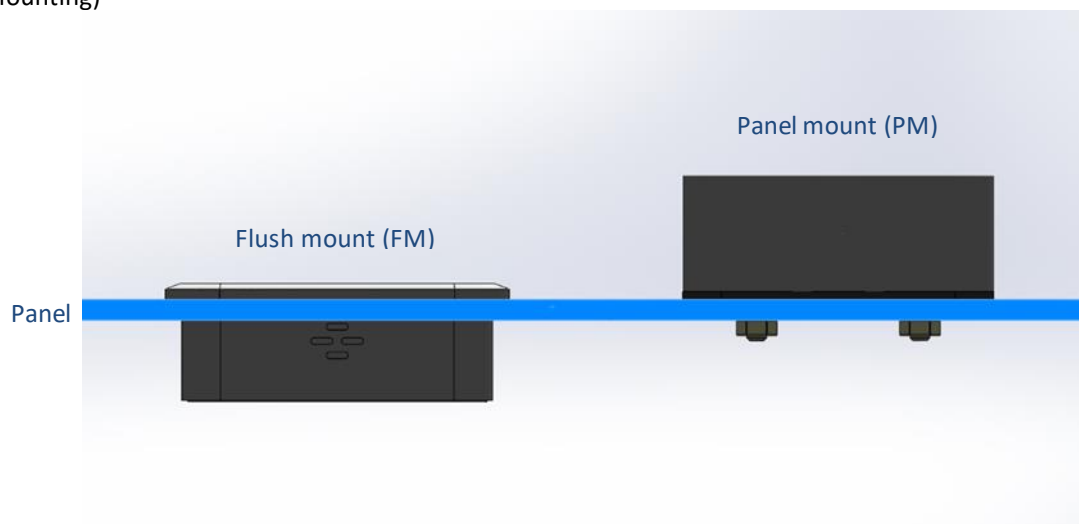


Figure 1 - UNO-8 G2 Flush and Panel mount options

3.1 Product views and dimensions – Panel mount (PM)

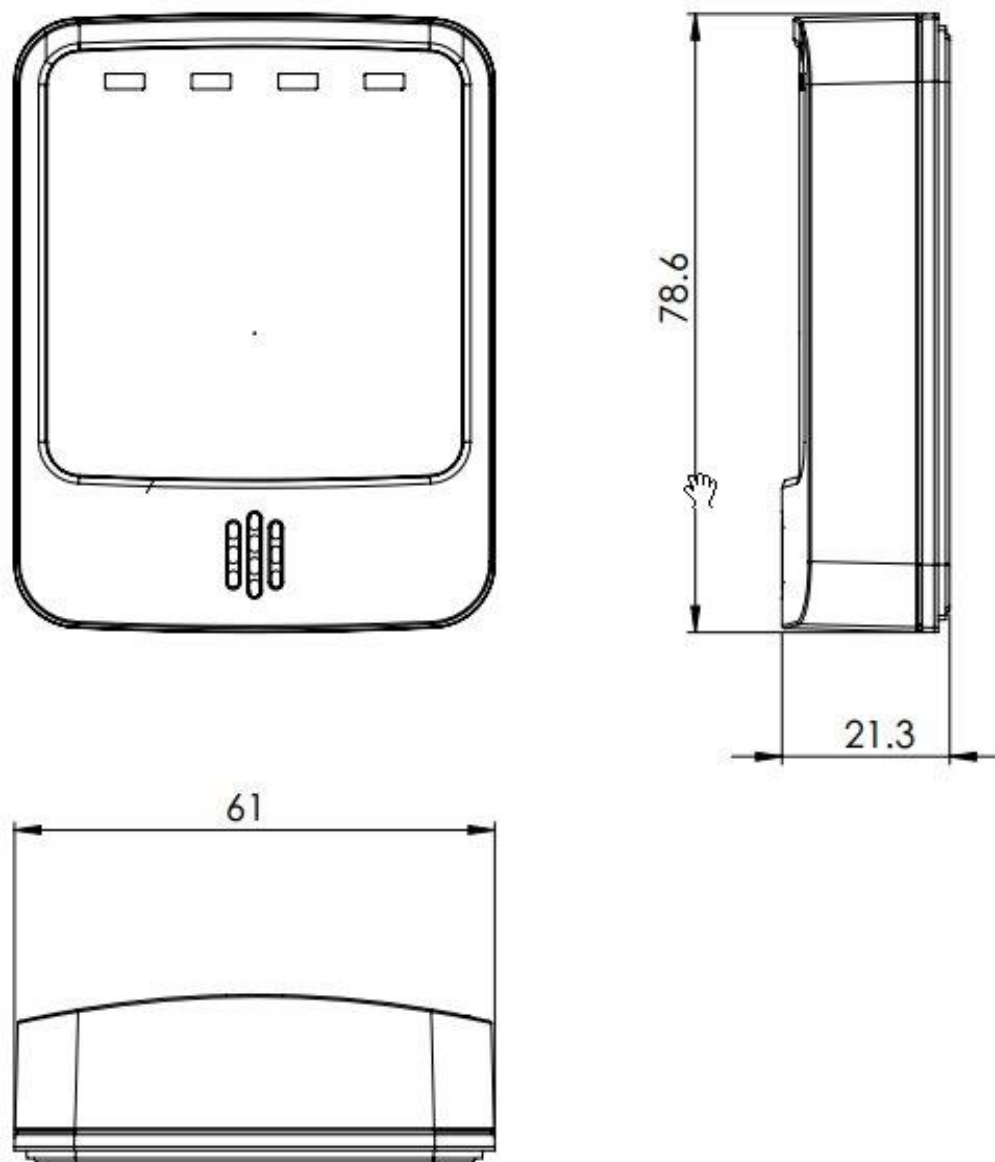


Figure 2 - UNO-8 G2 PM Views and Dimensions

3.2 Product views and dimensions – Flush mount (FM)

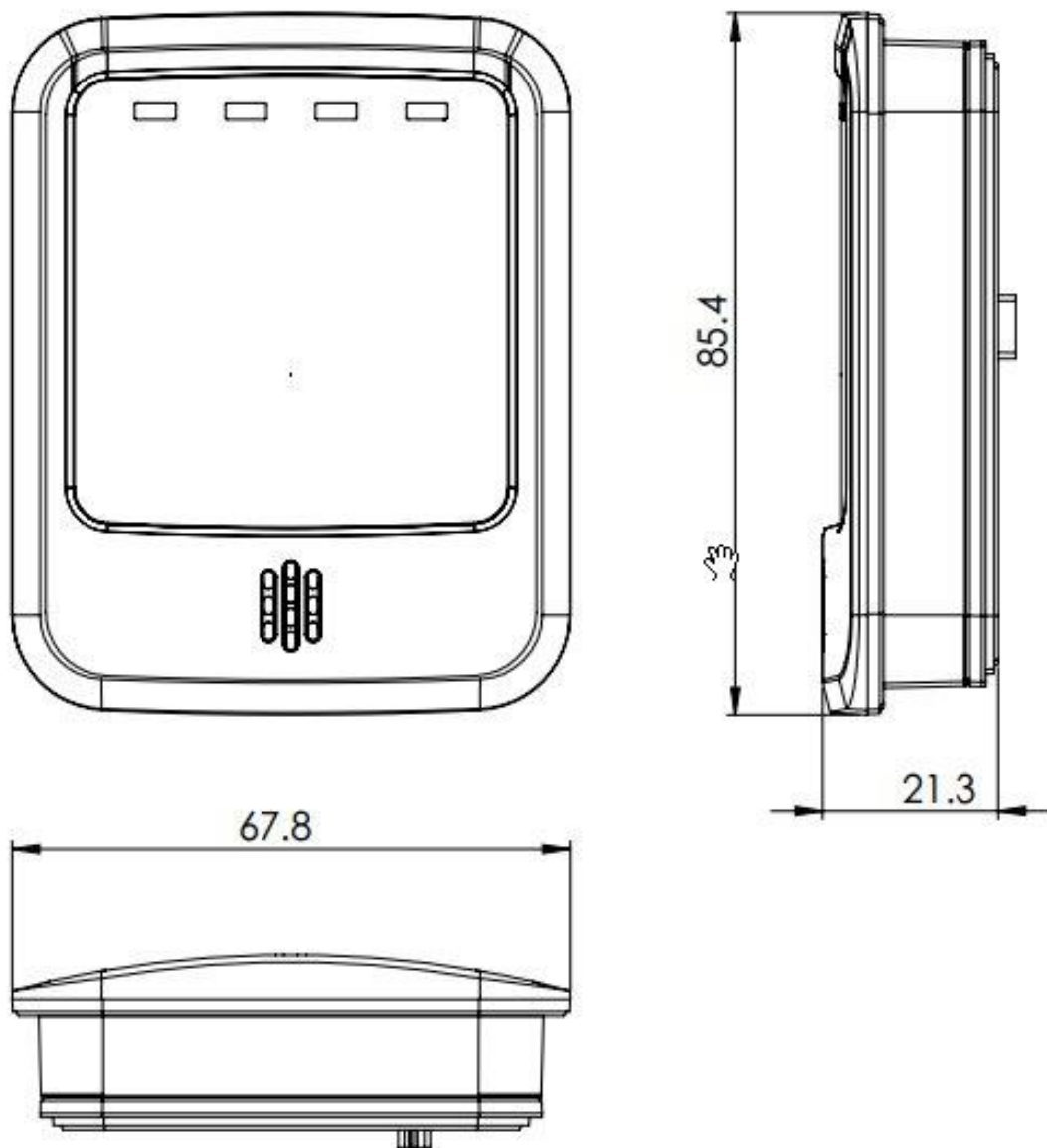


Figure 3 - UNO-8 G2 FM Views and Dimensions

4 Interface and Cables

4.1 Mini USB

The USB model has a mini-USB connector on the back in the panel mount options or at the bottom of the reader in the desk top models. The USB connector provides communication and power to the reader.

4.1.1 USB Cable

The USB cable (1.2m) has a mini-USB upstream connector on the reader side and a USB downstream connector on the host side. In this setup, the reader is USB powered; no additional power supply is required.

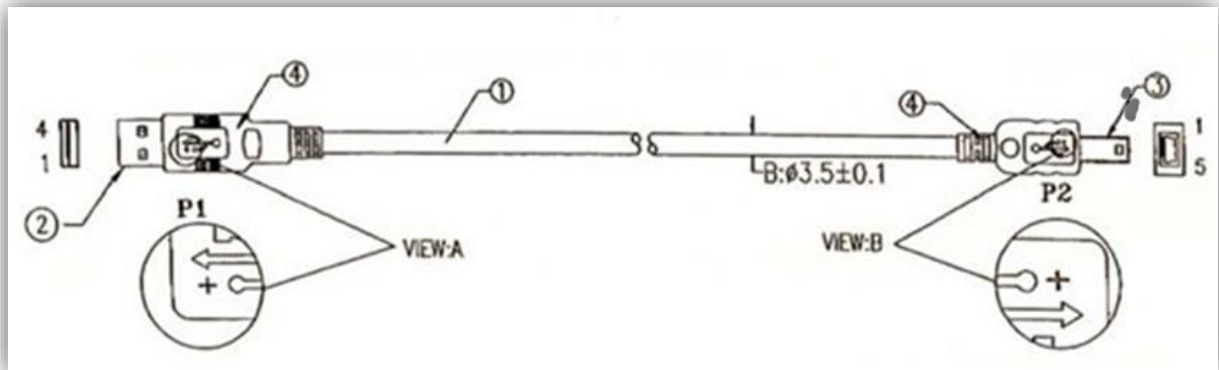


Figure 4: USB Cable (PN 10004306)

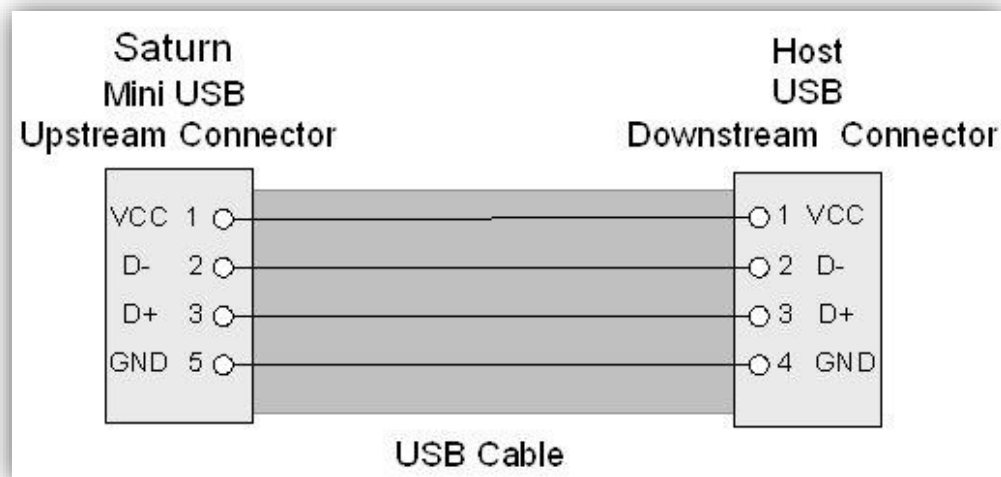


Figure 5: Mini USB Connector

4.2 Main connector

The Main connector is implemented using a JST 10 pin connector (JST P/N BM10B-ZPDSS).

Connector pin designation:

Pin #	Description
1	RS232 Rx
2	RS232 Tx
3	USB D-
4	Digital IN
5	USB D+
6	Digital OUT OC
7	GND (direct)
8	Vin
9	5V
10	GND Ext (via common mode choke)

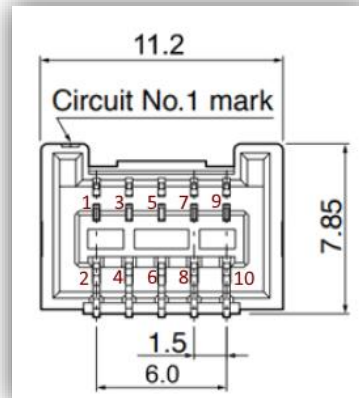


Figure 6: Main Connector housing on UNO-8

4.2.1 RS232 Cables

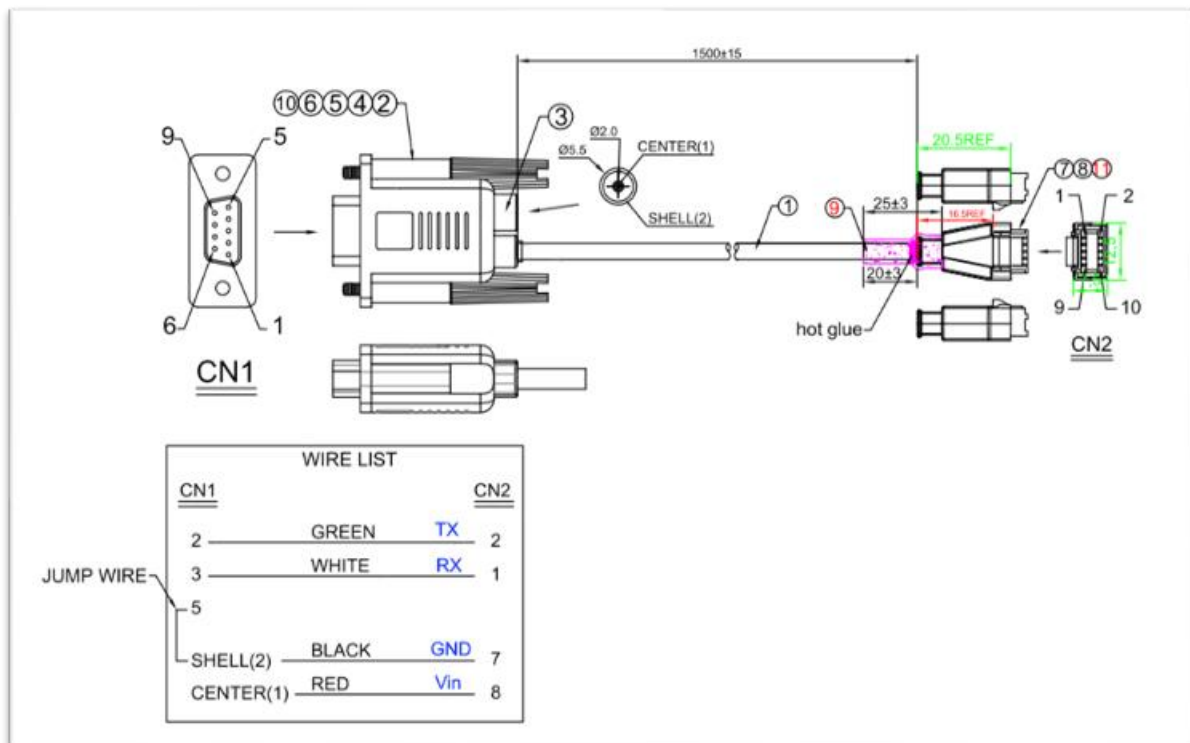


Figure 7: ZPD to DB9 cable (PN 1000491)

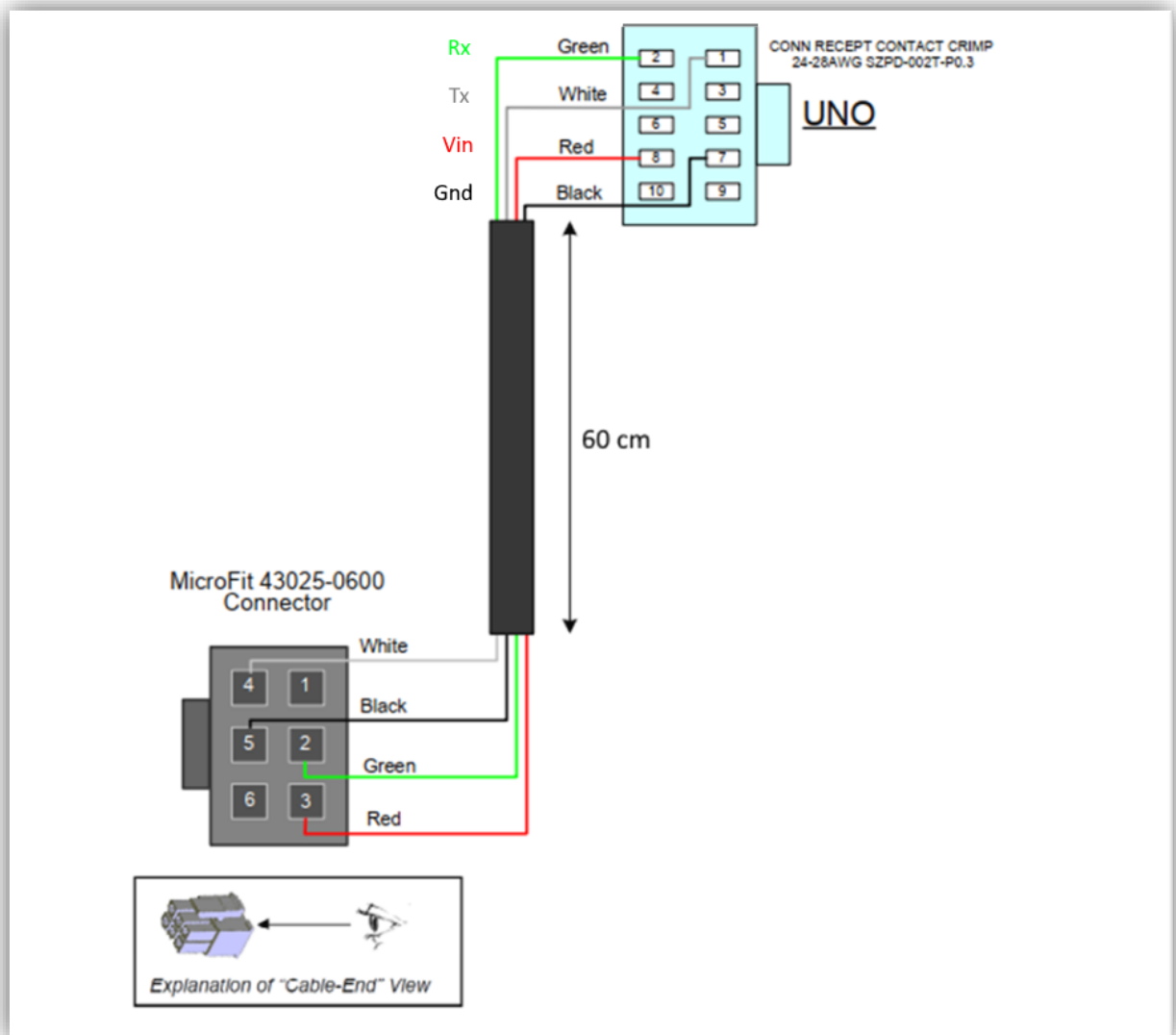


Figure 8: ZPD to Microfit cable (PN 10004914)

5 Part Numbers

5.1 Reader Part Numbers

PN	Description
RU802WWB01	UNO8 (SATURN 8700) G2 USB PM / DN
RU802WWB02	UNO8 (SATURN 8700) G2 USB PM / BL / DN
RU802WWB03	UNO8 (SATURN 8700) G2 USB FM / DN

5.2 Optional Cable Part Numbers

PN	Description
10004306	Cable Mini USB to USB-A 120mm
10004913	UNO RS232 0.5m Cable DB9 to ZPD
10004914	UNO RS232 0.6m Cable Microfit 2x3 pins to ZPD
10004305	Cable Mini USB 5Pin /Mini USB 5Pin1.5m

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into and outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.