APPENDIX B. DUAL 10G ETHERNET DONGLE

The NVIDIA® E3585 Dual 10G Ethernet dongle is designed to convert the single-ended version of 10GBASE-T Ethernet from the High-Speed Data (HSD) connector to the standard RJ45 10GBASE-T Ethernet, which carries differential signals. This allows the 10G Ethernet of the NVIDIA DRIVE AGX™ System (E3550) and the NVIDIA DRIVE AGX Pegasus™ II System (P3570) to be connected to other systems by using industry standard CAT6 or CAT6A cables.

E3585 DUAL 10G ETHERNET DONGLE

The E3585 dongle, as shown in Figure B-1, is one of the optional accessories designed for the NVIDIA DRIVE AGX™ Developer Kit.

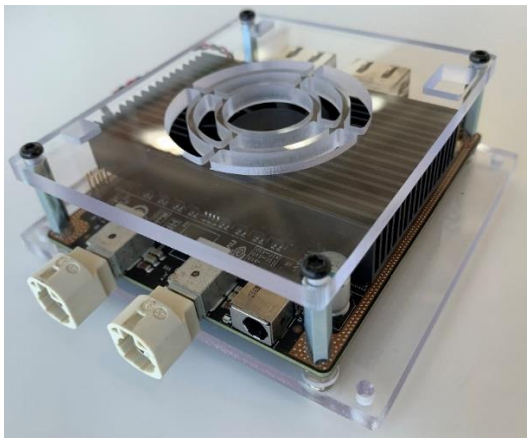

Figure B-1. E3585 Dual 10G Ethernet Dongle with HSD Connector

Figure B-2 shows the high-level block diagram of the dongle.

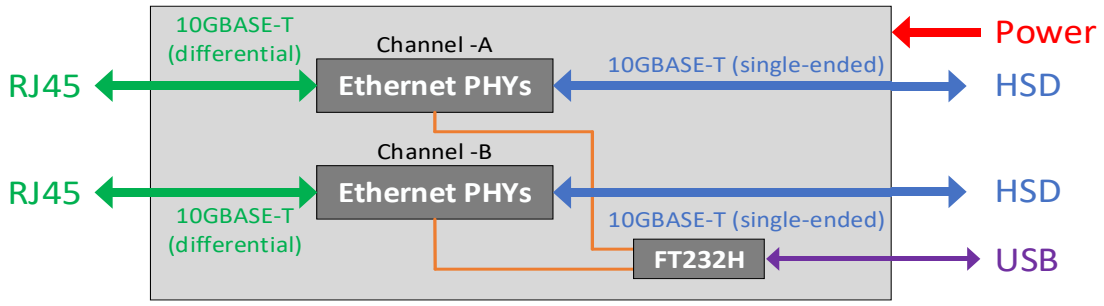

Figure B-2. E3585 Dual 10G Ethernet Dongle High Level Block Diagram

The dongle contains two instances of the circuit that converts 10G Ethernet from HSD form factor to RJ45. The NVIDIA DRIVE AGX System connects to the dongle using two HSD cables which are provided in the kit. The HSD cables have the same connectors at both ends and are mated to the HSD connectors on the NVIDIA DRIVE AGX System and the E3585 dongle respectively.

Figure B-3 shows the front and rear views of the E3585 Ethernet dongle. The HSD connectors (white color) on the DRIVE AGX System are the same as the connectors used on the E3585 Ethernet dongle.

The dongle I/O ports on both the front and the rear panels are as follows:

- **DC Power jack**: 7V to 28V, with 2.5mm diameter inner pin (Mating plug: 5.5x2.5mm)
- **Micro USB connector**: connecting to the USB port of a PC
- **LED indicators**: on both the front side and rear side for power and Ethernet status
- **HSD connectors**: two connectors for connecting to the DRIVE AGX System
- **RJ45 connectors**: two connectors with edge LEDs for connecting to the other systems

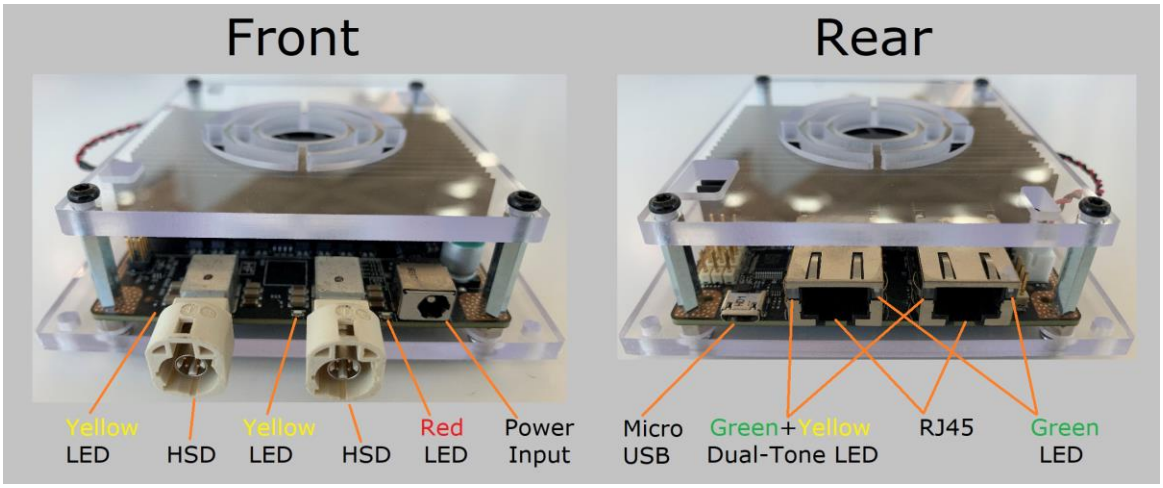

Figure B-3. Front and Rear Panels of the E3579 Ethernet Dongle

E3585 LED INDICATORS

Three LEDs on the front side of E3585 are:

- **Red** (x1): on the left side of the power jack
- **Yellow** (x2): on the left side of the HSD connector

Two LEDs on each of the two RJ45 connectors on the rear side of E3585 are:

- **Green**: on the right side of the RJ45 connector
- **Green**/**Yellow** (dual tone): on the left side of the RJ45 connector (only **Yellow** is used)

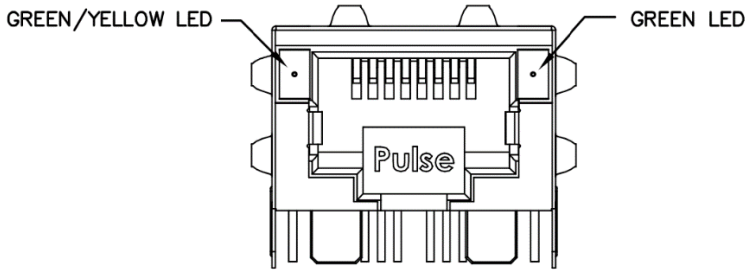

Figure B-4. LEDs on the RJ45 Ethernet

These LEDs are used for indicating the dongle status as listed in Table B-1.

Table B-1. LED Locations and Status Descriptions

Side	LED Location	LED Color	LED Status	Description
Front	Left side of power jack	Red	Lit	E3585 is powered
	Left side of HSD	Yellow	Lit	10GbE Link Status
Rear	Right edge of RJ45	Green	Lit	10GbE Link Status
	Left edge of RJ45	Green / Yellow	Blink on Yellow	10GbE Traffic

CONNECTING E3585 TO THE NVIDIA DRIVE AGX SYSTEM

As shown in Figure B-5, the dongle must be powered externally with a DC power adapter. Using the HSD cables provided with the dongle, connect the 10GBASE-T from the dongle's HSD connectors to the DRIVE AGX System front panel 10GbE HSD connectors labeled **XA** and **XB** on the silkscreen. The USB connection to the PC is optional and is not required for the dongle to operate.

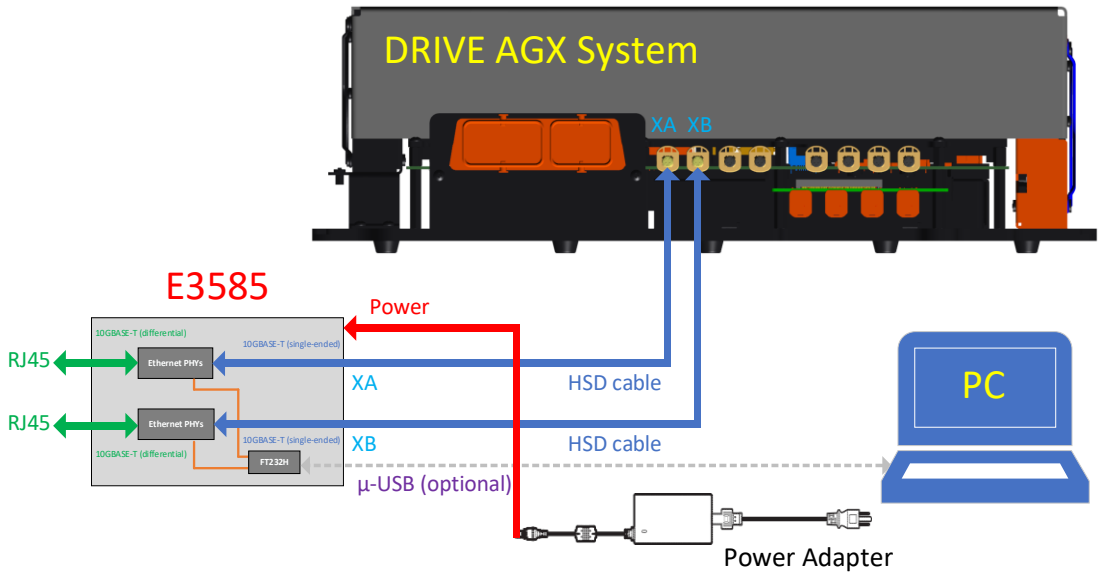

Figure B-5. E3585 System Connections

E3585 OPERATING VOLTAGE

Table B-2 lists the operating voltage range of the power input.

Table B-2. Operating Voltage

Power Input Type	Voltage Range
DC Power	7V to 28V

E3585 OPERATING CURRENT

The operating current is dependent on factors such as the number of active channels and the Ethernet speed. Table B-3 contains the required current when the power input is at 12V.

Table B-3. Operating Current

Power Input Voltage	Current Range
12VDC (using the 12V power adapter)	1A to 3A
Note: The current numbers in this table are specified at the nominal input voltage of 12V. Please calculate the worst-case current based on the lowest possible input voltage, $Vmin\ (v)$, using the following equation: $$Current\ @\ Vmin = Current\ @\ 12V \times \frac{12V}{Vmin\ (v)}$$	

E3585 OPERATING AND STORAGE TEMPERATURE

The system should be operating and stored under the temperature specifications.

Table B-4. Operating and Storage Temperatures

Mode	Ambient Temperature Range
Operating	0°C to 45°C
Storage	-40°C to 65°C

E3585 MECHANICAL SPECIFICATION

Figure B-6 shows how the E3585 dimensions are labeled and Table B-5 lists out the typical dimensions and the typical weight of the dongle.

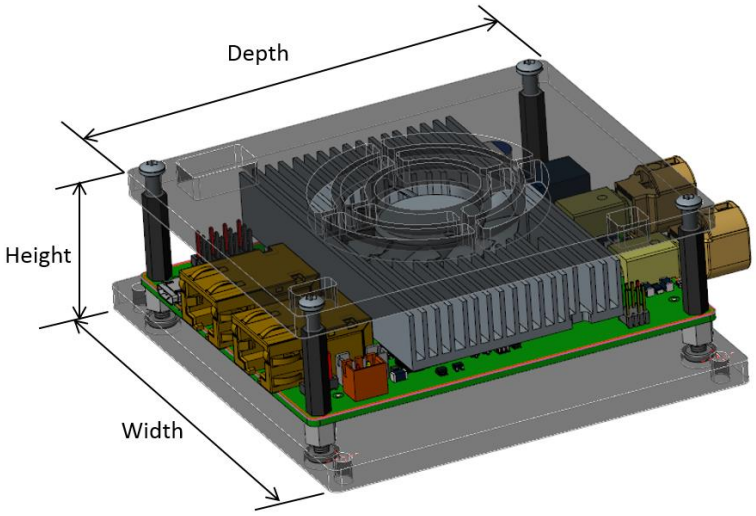

Figure B-6. E3585 Dimensions with Plexiglass Panels on Top and Bottom

Table B-5. Dimensions and Weight

Dimensions (mm)	
Width	105.00 ± 0.25
Height (excluding the height of the four screws on top, which adds an additional 2mm)	35.58 ± 0.25
Depth	96.00 ± 0.25
Weight (g)	
With no cable connected	255 ± 3%