



General Business Agreement

Open Source and Licensed IP

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Size A	February 7, 2023	Revision 5.0
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GENERAL BUSINESS STRATEGY

Intended Markets

First, it should be stated that GORE BIKE SIGNALS is **not** selling a retail product that can be ordered, stocked, or catalogued. GORE BIKE SIGNALS is not a manufacturer. Yet, all the manufacturing drawings exist for immediate production, and if chosen, our resources can be used to build any quantity.

Experience gained from several international bicycle trade shows has proven how diverse the industry has become and the extent to which bicycle brand manufacturing works with Original Equipment Manufacturers (OEM) for component selection. One well known maker of touring e-bikes chooses to mount its front light above the wheel while another finds space on the handlebar. Another e-bike maker integrates its rear lighting into the trunk battery compartment, while yet another hard-wires a reflector-bulb assembly to the rear frame. Actuation preference can vary as much, depending on how and where the front unit is mounted. And there are styling preferences of the brand that require its lighting units to conform with the frame. Furthermore, if the Gore Signal is integrated into an e-bike platform then the battery and several charging components can be removed and a power connection to the controller is all that is required.

This much variability, and more, has spelled failure for every attempt to design and retail bicycle turn signals; and the graveyard of signaling is found on eBay, Amazon and other sites where funds once invested in a new idea now struggle to recoup their losses. I have chosen to avoid these pitfalls.

What Gore Bike Signals Is Selling

Only two electronic components are for sale, each pre-programmed with software that configures the hardware to meet the client's specific needs. The devices are called *micro-controllers* and they contain the code to operate the PCB hardware and all functions of the product. The parts will be programmed by the vendor and given unique part numbers that are included in a Bill of Materials (BOM) that lists all components necessary to populate the PCBs. When the BOM parts are purchased, GORE BIKE SIGNALS will receive a small mark-up on each of the micro-controllers. As of this writing, the vendor price for one unprogrammed controller is \$7.92.

The only two items that GORE BIKE SIGNALS will sell are:

- Front unit micro-controller with embedded software
- Rear unit micro-controller with embedded software

Free Open-Source IP Licensed for Use

GORE BIKE SIGNALS is ready to work with OEM clients by offering free and open-source use of its manufacturing drawings through licensure. It is expected that a client will want to make changes to the existing prototype design so that the product represents their brand in appearance, fit, size, and performance. The open-source engineering drawings make it possible to customize:

- Housing style and mounting
- Power source to the units
- PCB size and shape
- Software control of all behavioral and performance features

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IP THAT IS FREE AND OPEN SOURCE

The following IP is an example of what will be licensed for free and open-source use:

- Bill of Materials (BOM) that itemizes every component needed to build a working set of units
 - COMMON BOM Sig 5.2 and Act 5.4.xlsx
- Electronic schematics of all active hardware, and external actuation cables
 - ACTUATOR UNIT REV 5_4.DSN
 - SIGNALER UNIT REV 5_3.DSN
 - SWITCH CABLES.DSN
- PCB Etch Gerber Files for making board etches, bundled and zipped
 - DC_GORE_BIKE_ACTUATOR-5_3-Gerbers.zip
 - DC_GORE_BIKE_SIGNALER-5_2-Gerbers.zip
- Housing, lens and cradle mechanical design (3D) files for printing mold forms
 - ACT 5_2_4 Housing.EASM
 - SIG 5_3_2 Housing.EASM
 - ACT 5_2_3 CRADLE.STEP

The complete product IP is comprised of these distinct parts:

Printed Circuit Board (PCB) Etch

The etch is the multi-layered fiber glass (FR4) substrate that contains the copper signal traces, power planes, component solder pads, and drilled vias. When populated it is called the *printed circuit board* (PCB). Its dimensions also define the minimum width and height of the front and rear units. All prototype etches have been made by Advanced Circuits in Aurora CO.

Schematic Diagram

A schematic capture program such as Orcad creates design files that become the basis of the Gerber files. A typical design file is:

ACTUATOR UNIT REV 5_4.DSN

The files needed to fab the etch are called **Gerber** files and appear for example:

DC_GORE_BIKE_ACTUATOR-5_3-Gerbers.zip

Printed Circuit Board (PCB)

The two PCBs are populated by a board manufacturing facility, such as Tate Technology in Spokane WA, employing high-speed pick-and-place robotics. The following items are needed:

- Bill of Materials (BOM) drawing
- PCB Etch
- Parts Kit containing all the components needed to populate the etch
- Schematic Diagram drawing
- Gerber Files

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Bill of Materials (BOM)

An itemized list of every component needed to build the GORE BIKE SIGNAL is called the BOM. Each line item in the list contains fields that specify the part's general description, its schematic reference number, the total quantity needed, the manufacturer's part number, and the vendor's part number which is used to order the device. Examples are LEDs, diodes, resistors, battery holder, IC's, and audio device.

An example BOM is:

COMMON Sig 5.2 and Act 5.4.xlsx

Housing

The prototype housing for each unit consists of two printed halves which are bonded together after the PCB is inserted between them. One half is the body, and can be pigmented to any desired color and also stylized to conform with a brand's uniform appearance. The other half is the lens plate. This piece is ideally clear and not sensitive to UV yellowing.

It is expected that a client will have specific ideas about how the signal units are housed, where the units are mounted on the bike, and how the system is to be powered and actuated. A housing concept for both front and rear units already exists and is in use, providing more than satisfactory and reliable use among test riders in the field. The 3D files from which the housings have been printed are to be provided at no cost and licensed for use or modification by the client. In this way a client may customize their product.

3-D Modeling Files

The 3-D files needed to print the housing model are typically Solid Works output. This is an example:

ACT 5_2 HOUSING COMPONENTS\ACT 5_2 HOUSING.SLDPRT

IP THAT IS PROTECTED

The software that resides in the two micro-controller ICs is protected and legally defined as "trade secret." The code base shall not be read, copied, nor reproduced in any form. GORE BIKE SIGNALS is the only entity authorized to view the software and to make revisions. A client may request specific behavior profiles for its use, which GORE BIKE SIGNALS will make prior to production. There is no patent application for any part of the GORE BIKE SIGNAL.

DOCUMENTS AVAILABLE ON REQUEST

The curious visitor may request additional information about the GORE BIKE SIGNAL by completing the contact form.

Here is a list of pdf documents that is currently supported:

Getting Started	<i>a brief guide to user functions on the front and rear units</i>
Group Ride Mode	<i>this describes the group ride feature that links followers to a leader</i>
Product One-Sheet	<i>a one-sheet description of the Gore signal</i>
Specs and Options	<i>physical specs and software options are detailed</i>
User Manual	<i>a detailed manual for users that details many of the menus and features</i>
About Gore Bike Signals	<i>this document lists many of the technical and manufacturing resource partners</i>

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