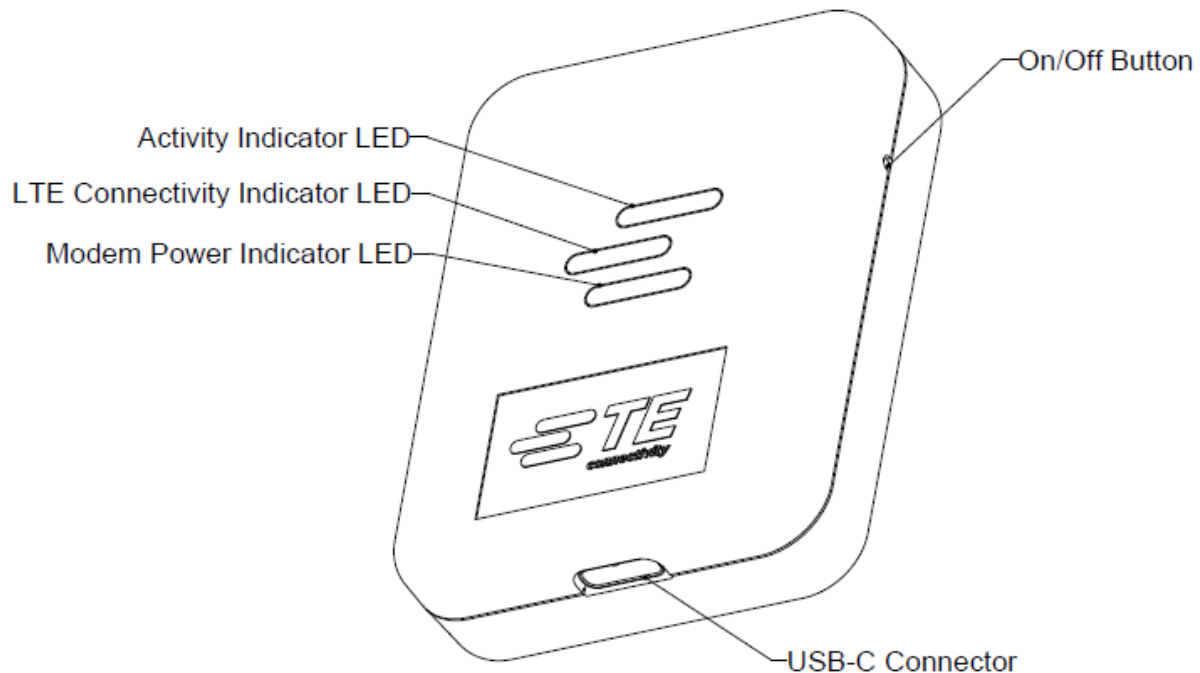




LEMBAS LTE/GNSS USB Modem



Type	Description
Activity Indicator LED	This LED can show 3 different states: <ul style="list-style-type: none">• Searching network: Slow blink (200ms high / 1800ms low)• Idle: Slow blink (1800ms high / 200ms low)• Transferring data: Fast blink (125ms high / 125ms low)
LTE Connectivity Indicator LED	This LED can show 2 different states: <ul style="list-style-type: none">• Connected to LTE network: High• Not connected to LTE network: Low
Modem Power Indicator LED	This LED can show 2 different states: <ul style="list-style-type: none">• Powered on normally: High• Not powered on normally: Low
USB-C Connector	This is where the USB-C connector of the USB-C to USB-A cable assembly will plug in to
On/Off Button	This button safely powers the LEMBAS USB Modem on or off while connected to the SBC: <ul style="list-style-type: none">• Press and hold for 2 seconds to turn off• Press once to turn on <p><i>*You may use a paper clip or a SIM Ejector pin to access this button</i></p>



Getting Started:

1. Activate Data Plan:

- a. Go to <https://lembas.luner.io>.

Disclaimer: This link will take you to Pod Group's IoT data plan activation platform. Pod Group is a third party MVNO provider owned by Giesecke+Devrient. TE Connectivity does not collect your personal data from you when accessing this link.

- b. Create an account or log in if you already created one.
 - *Note: You will need to register your credit card first during account creation step.*
- c. Once logged in, select "Provision SIM" on top right corner.
- d. Input SIM number from the back of the LEMBAS USB Modem.
- e. Choose data plan.
- f. Review and confirm order to activate data plan.

2. Set up LEMBAS USB Modem:

- a. Connect the LEMBAS USB Modem to the single board computer's USB-A port.
- b. Open terminal, then type `cd /media/<username>/tedongle/LEMBAS_SW_Package_V1.0` and press Enter
 - *Note: <username> is the login username of SBC:*
 - e.g. "pi" for Raspberry Pi
 - e.g. "linaro" for ASUS Tinker Board
 - e.g. "odroid" for Odroid XU4 and Odroid N2
 - e.g. "YOUR_NAME" for NVIDIA Jetson Nano (from initial configuration step)
- c. Once in this directory, type `./te_install.sh` and press Enter, then restart the SBC when prompted to do so.
- d. After SBC has restarted, you will notice the TE logo on the taskbar. Click on this logo.
- e. Now the LEMBAS USB Modem is set up as plug-and-play! Enjoy!
- f. *Note: Refer to the README file in the LEMBAS USB Modem's mass storage directory (/media/<username>/tedongle/LEMBAS_SW_Package_V1.0) for more details.*

Product Specifications

TE Part Number	2195873-1
TE Part Description	LEMBAS LTE/GNSS USB Modem
Network	Cellular CAT 4 LTE (downlink: 150 Mbps, uplink: 50 Mbps)
LTE Bands	B2, B4, B12
GNSS Bands	L1, L2
Temperature Rating	Operating: 32°F to 122 °F (0°C to 50°C) Storage: -4°F to 140°F (-20°C to 60°C)
Compliance	RoHS, REACH, California Prop 65
Mass Storage Capacity	16GB
Compatible SBC	Raspberry Pi, Odroid XU4, Odroid N2, ASUS Tinker Board, NVIDIA Jetson Nano
Compatible CPU Architecture	ARM 32bit, ARM 64bit
Compatible OS	Linux - Debian & Ubuntu
Data Plan Provider	Pod Group
Data Plan Region	US Only



Safety, Handling and Use:

Important safety information for LEMBAS USB Modem (the “device”)

WARNING: Failure to follow these safety, handling and use instructions could result in personal injury, damage to the LEMBAS USB Modem, or prevent proper performance of this device. Read all the safety, handling and use information before using this device.

The LEMBAS USB Modem is a complete assembly, ready for use. No assembly is required. Remove from packaging and use as instructed. Do not disassemble this device. Disassembly may damage the device or prevent proper performance of the device. Disassembly may also cause personal injury to the user. Disassembly of the LEMBAS USB Modem will void the Limited Warranty.

Handle the LEMBAS USB Modem with care. It is made of metal and plastic and has sensitive electronic components inside. This device can be damaged if dropped, bent, punctured, struck or crushed, or if it comes in contact with liquid. Keep this device dry and use and store in a cool dry place.

If you suspect damage to the LEMBAS USB Modem, do not use the device. Use of the device when damaged may cause electric shock, overheating and/or personal injury.

Do not use the LEMBAS USB Modem if it has come in contact with liquid until the device has fully dried. Moisture in the device may cause electric shock and personal injury, and may also prevent proper performance of the device. Allow the device to thoroughly dry before further use. Do not attempt to dry the device using an external heat source or by inserting an absorbent material into the device.

The LEMBAS USB Modem is intended for use with a Single Board Computer (“SBC”) and to obtain its power from the SBC. Do not attempt to power the device from an electrical outlet or other USB-A or USB-C connection to any power source other than the SBC. If you do, the LEMBAS USB Modem may overheat resulting in personal injury or damage to the device.

The recommended current rating for the LEMBAS USB Modem is 2.5 to 3.0 amps. Do not connect this device to any power source in excess of 5.5 volts DC, which is the maximum voltage input for the device. If you do, the LEMBAS USB Modem may overheat resulting in personal injury or damage to the device.

The LEMBAS USB Modem is packaged with an original USB-A to USB-C cable assembly. Make sure to use only the original USB-A to USB-C cable assembly or other third party USB-IF certified USB-A to USB-C cable assembly. If you do not, you may damage the device. For more information, contact TE Customer Service via <https://www.te.com/usa-en/product-2195873-1.html> or one of TE authorized distributors in which you purchased the device from.

Do not use any commands with the LEMBAS USB Modem other than the commands instructed for software installation and set-up of the device. Using other commands/modes for the LEMBAS USB Modem, may result in overheating and personal injury and the device may be damaged or otherwise not properly perform.

The LEMBAS USB Modem is designed to work in ambient temperatures between 32°F and 122 °F (0°C and 50°C) and stored in temperatures between -4°F and 140°F (-20°C and 60°C). Use or storage of the LEMBAS USB Modem outside these operating parameters may damage the device and/or prevent the proper performance of the device.

Use LEMBAS USB Modem in an environment within the ranges specified in the Product Specifications. Failure to do so may result in personal injury, damage to the device, and/or prevent proper performance of the device.



During use of the LEMBAS USB Modem, do not hold or touch the device for a prolonged period of time with any part of the user's body. The LEMBAS USB Modem complies with required surface temperature limits, but even within these limits, sustained contact with warm surfaces for a prolonged period of time may cause personal injury.

The LEMBAS USB Modem transmits electronic/radio signals to connect with wireless networks. These emissions can negatively affect the operation of other electronic equipment, causing them to not operate or not properly operate. When use of electronic devices is prohibited or restricted, such as while traveling in an aircraft, turn off the device and do not use the device. Observe signs and notices and follow the directions of authorities that prohibit or restrict the use of electronic devices.

The emissions from the LEMBAS USB Modem may interfere with the proper operation of medical equipment. If you suspect that use of the LEMBAS USB Modem is interfering with your (or another person's) medical equipment, turn off the device and do not use the device. Consult the medical equipment manufacturer or a physician, if necessary, for further guidance.

The emissions from the LEMBAS USB Modem may interfere with the proper operation of other types of electronic devices. Consult the manufacturer of those electronic devices, if necessary, for further guidance.

Do not use the LEMBAS USB Modem in an environment which may contain potentially flammable or explosive chemicals, vapors, gasses or particles. Use of the LEMBAS USB Modem in such an environment may be hazardous and may result in serious personal injury.

Keep the LEMBAS USB Modem out of the reach of children. The LEMBAS USB Modem is not a toy, and contains small parts that may present a choking hazard.

FCC Statement

The FCC ID of LEMBAS USB Modem is 2A4DX-2195873-1. This ID and other related information such as SDoC information can also be found in the README file in the mass storage directory of the device /media/<username>/tedongle/LEMBAS_SW_Package_V1.0, which can be accessed by connecting the device to a single board computer (SBC).

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.

The LEMBAS USB Modem 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 device 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 device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.



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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Exposure Statement (SAR)

The LEMBAS USB Modem has been tested and meets applicable limits for radio frequency (RF) exposure.

Specific Absorption Rate (SAR) refers to the rate at which the body absorbs RF energy. The SAR limit is 1.6 watts per kilogram in countries that set the limit averaged over 1 gram of tissue and 2.0 watts per kilogram in countries that set the limit averaged over 10 grams of tissue. During testing, the LEMBAS USB Modem is set to its highest transmission levels when worn or carried against the torso of the body, with 5mm separation.

SAR information for this device can be found by searching the FCC ID 2A4DX-2195873-1 at www.fcc.gov/oet/ea/fccid.

PTCRB Certified

The LEMBAS USB Modem is PTCRB certified. For more details, please visit www.ptcrb.com/certified-devices/ and search by selecting "integrated Device" for "Device Type" and typing in "2195873-1" for "Keyword".

AT&T Certified

The LEMBAS USB Modem is AT&T certified. Please visit <https://iotdevices.att.com/certified-devices.aspx> for more details.

RoHS and REACH Compliance

The LEMBAS USB Modem meets the requirements of RoHS and REACH. For more information, please go to <https://www.te.com/usa-en/product-2195873-1.html>.

California Prop 65 Compliance

The LEMBAS USB Modem meets the requirements of California Prop 65. For more information, please go to <https://www.te.com/usa-en/product-2195873-1.html>.



End User License Agreement

- 1) Under this End User License Agreement (the “Agreement” or “EULA”), TE Connectivity Corporation (the “Vendor”) grants to the user (the Licensee”) a nonexclusive and nontransferable license (the “ License”) to use LEMBAS SW Package V1.0 (the “Software”).
- 2) “Software” includes the executable computer programs, the source code and any related printed, electronic and online documentation and any other files that may accompany the product.
- 3) Title, copyright, intellectual property rights and distribution rights of the Software remain exclusively with the Vendor. Intellectual property rights include the look and feel of the Software. This Agreement constitutes a license for use only and is not in any way a transfer of ownership rights to the Software.
- 4) The Software may be loaded onto no more than one computer. A single copy may be made for backup purposes only.
- 5) The rights and obligations of this Agreement are personal rights granted to the Licensee only. The Licensee may not transfer or assign any of the rights or obligations granted under this Agreement to any other person or legal entity. The Licensee may not make available the Software for use by one or more third parties.
- 6) The Software may not be modified, reverse- engineered, or de-compiled in any manner through current or future available technologies.
- 7) Failure to comply with any of the terms under the License section will be considered a material breach of this Agreement.
- 8) The original purchase price paid by the Licensee will constitute the entire licensee fee and is the full consideration for this Agreement.
- 9) Limitation of Liability- The Software is provided by the Vendor and accepted by the Licensee “as is”. Liability of the Vendor will be limited to a maximum of the original purchase price of the Software. The Vendor will not be liable for any general, special, incidental or consequential damages including, but not limited to, loss of production, loss of profits, loss of revenue, loss of data, or any other business or economic disadvantage suffered by the Licensee arising out of the use or failure to use the Software.
- 10) The Vendor makes no warranty expresses or implies regarding the fitness of the Software for a particular purpose or that the Software will be suitable or appropriate for the specific requirements of the Licensee.
- 11) The Vendor does not warrant that use of the Software will be uninterrupted or error- free. The Licensee accepts that software in general is prone to bugs and flaws within an acceptable level as determined in the industry.
- 12) Warrants and Representations- The Vendor warrants and represents that it is the copyright holder of the Software. The Vendor warrants and represents that granting the license to use this Software is not in violation of any other agreement, copyright, or applicable statute.
- 13) Acceptance- the term of this Agreement will begin on Acceptance and is perpetual.
- 14) Termination- This Agreement will be terminated, and the License forfeited where the Licensee has failed to comply with any of the terms of this Agreement or is in breach of this Agreement. On termination of this Agreement for any reason, the Licensee will promptly destroy the Software or return the Software to the Vendor.
- 15) Force Majeure- The Vendor will be free of liability to the Licensee where the Vendor is prevented from executing its obligations under this Agreement in whole or in part due to Force Majeure,



such as earthquake, typhoon, flood, fire and war or any other unforeseen and uncontrollable event where the Vendor has taken and all appropriate action to mitigate such an event.

- 16) Governing Law- The Parties to this Agreement submit to the jurisdiction of the courts of the Commonwealth of Pennsylvania for the enforcement of this Agreement or any arbitration award or decision arising from this Agreement. This Agreement will be enforced or construed according to the laws of the Commonwealth of Pennsylvania.

US Distributor Purchaser End User Agreement

This Distributor Purchaser End User Agreement (“Agreement”) governs your retail purchase and use of the products and or services and support (“Product”) sold in the United States by TE, including its affiliates and subsidiaries. By purchasing and using the product, you (“Customer”) agree to be bound by the terms of this Agreement. If you do not agree with the entirety of the terms, do not use the product, and return the product to your place of purchase (subject to the terms of its return policy).

This Agreement may not be altered, supplemented, or amended by the use of any other document(s) unless otherwise agreed to in a written agreement signed by both you and TE.

Return

Returns and exchanges are governed by the policies of the distributor where you purchased the Product from.

Service and Support – For Product Service or Support contact TE Customer Service via <https://www.te.com/usa-en/product-2195873-1.html>.

Not for Resale or Export

You agree to comply with all applicable laws and regulations of the various states in the United States. You agree and represent that you are buying for your own internal use only, and not for resale or export.

Warranties

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state, province to province or jurisdiction to jurisdiction.

TE's responsibility for malfunctions and defects in hardware is limited to repair or replacement as set forth in this warranty statement.

For any incident covered by this TE” limited hardware warranty, you must use te-provided parts and products, which TE will provide to you for no additional charge.

To the extent not prohibited by law in your state, province, jurisdiction or country, this warranty and the remedies set forth are exclusive and in lieu of all other warranties, remedies and conditions, whether oral, written, statutory, express or implied.

Except for the express warranties contained in this warranty statement and to the extent not prohibited by law, TE disclaims all other warranties and conditions, express or implied, statutory or otherwise, including without limitation, warranties of merchantability, merchantable quality and fitness for a



particular purpose and warranties and conditions against hidden or latent defects. Some states, provinces, jurisdictions or countries do not allow disclaimers of implied warranties and conditions, so this disclaimer may not apply to you.

To the extent such warranties and conditions cannot be disclaimed under the laws of the United States, TE limits the duration and remedies of such warranties and conditions to the duration of this express limited warranty (as reflected on your packing slip, invoice, receipt or other sales documentation) and, at TE's option, the repair or replacement services described below. Some states, provinces, jurisdictions or countries may not allow limitations on how long an implied warranty or condition may last, so the limitation described above may not apply to you.

No warranties or conditions, whether express or implied, will apply after the limited warranty period has expired. Some states, provinces, jurisdictions, or countries do not allow limitations on how long an implied warranty or condition lasts, so this limitation may not apply to you.

For all customers. We do not accept liability beyond the remedies provided for in this limited hardware warranty, and we do not accept liability for consequential or incidental damages, for third-party claims against you for damages, for products not being available for use, or for lost or damaged data or software. TE does not warrant that the operation of any TE product will be uninterrupted or error free. Our liability will be no more than the amount you paid for the specific product that is the subject of a claim. This is the maximum amount for which we are responsible.

Limitation of liability

TE DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH HEREIN, INCLUDING BUT NOT LIMITED TO ANY LIABILITY FOR PRODUCT NOT BEING AVAILABLE FOR USE, LOST PROFITS, LOSS OF BUSINESS OR FOR LOST OR CORRUPTED DATA OR SOFTWARE, OR THE PROVISION OF SERVICES AND SUPPORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, TE WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INDIRECT OR PUNITIVE DAMAGES, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR FOR ANY CLAIM BY ANY THIRD PARTY. YOU AGREE THAT FOR ANY LIABILITY RELATED TO THE PURCHASE OF PRODUCT, TE IS NOT LIABLE OR RESPONSIBLE FOR ANY AMOUNT OF DAMAGES ABOVE THE AMOUNT YOU PAID FOR THE APPLICABLE. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, THE REMEDIES SET FORTH IN THIS AGREEMENT SHALL APPLY EVEN IF SUCH REMEDIES FAIL THEIR ESSENTIAL PURPOSE.

Applicable Law

The parties agree that this agreement, the purchase, or any claim, dispute or controversy (whether in contract, tort or otherwise, whether pre-existing, present or future and including statutory, consumer protection, common law and equitable claims) between customer and TE arising from or relating to this Agreement its interpretation or the breach, termination or validity thereof, the relationships which result from this agreement, customers purchase or use of the product, TE advertising or any related purchase shall be governed by and construed in accordance with the laws of the state of Pennsylvania, excluding laws directing the application of the laws of another jurisdiction, and the purchaser hereby attorns to such



exclusive jurisdiction. The United Nations Convention on Contracts for the International Sale of Goods will not, for any purpose, govern or apply to the sale of goods or any transactions, performance, or disputes hereunder.

Dispute Resolution and Binding Arbitration

Any controversy or claim arising out of or relating to this Agreement, or the breach hereof, shall be settled by arbitration pursuant to the Commercial Arbitration Rules of the American Arbitration Association, and judgment on the award rendered by the Arbitrator(s) shall be binding, conclusive and non-appealable and may be entered in any court having jurisdiction thereof.

Mouser Electronics

Authorized Distributor

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