



VIDEO & SOUND PROFESSIONAL BROADCAST

- Audio and Video Cables • Assemblies • Conectors
- Accesories • Technical Support • HDTV Solutions
- F.O. Communication Equipment • Broadcast Quality

SENSITIVE TECHNOLOGY

PERCON – CYGNUS PRO

MODULAR BROADCAST HD-FIBER TESTER

RoHS MADE IN SPAIN (CE)

DESCRIPTION



The new CYGNUS PRO cable tester from Percon has a new revolutionary design that includes a main module and interchangeable heads totally compatible with any fiber or fiber + copper connector in the market (LEMO 3K.93C, FISCHER 1053, Neutrik OPTICALCON DUO (with or without copper contacts), Neutrik OPTICALCON QUAD, Stratos hybrid HX1080, Stratos HMA, Stratos HMC, Tyco ProBeam Junior, Tyco ProBeam minir , LC, SC, ST, FC, MTRJ...)

Thanks to its innovative system of interchangeable heads we only need one tester to certify all the fiber and fiber + copper cables commonly used in the TV world to link the cameras with the base stations and all the connection points between them in a fast and easy way.

MOBILE
 SDI
 HD-SDI
 3G-SDI
 BROADCAST
 CAMERA

FEATURES & BENEFITS

- Compact and robust design.
- Fully compatible with SMPTE 304M and ARIB connectors
- Rechargeable batteries that offer over 11 operating hours
- Rechargeable battery through mini USB connector.
- Measurement of fiber and copper in a single action
- Detection and identification of failures both in fiber and in the copper contacts.
- High-durability membrane keyboard perfect for field applications (minimum 20.000 uses).
- Aluminium housing.
- TYCO ProBeam / Compatible with LEMO 3K.93C, Fischer 1053, Neutrik OPTICALCON QUAD, Neutrik OPTICALCON DUO, Stratos HX1080, simple fiber connectors, TYCO -Pro-Beam.
- OLED color display (160 x 128 pixels).

Specifications subject to change without prior notice



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ORDERING INFORMATION (MODULES)

| REF. | DESCRIPTION |
|---------------------------|---|
| CYGNUS-MAIN | MODULO PRINCIPAL / MAIN MODULE |
| CYGNUS-TX1310-FXW | TRANSMITTER HEAD WITH CONNECTOR LEMO 3K.93C.FXW (SMPTE 304M) FOR 1310 nm. |
| CYGNUS-TX1550-FXW | TRANSMITTER HEAD WITH CONNECTOR LEMO 3K.93C.FXW (SMPTE 304M) FOR 1550 nm. |
| CYGNUS-RX-EDW | RECEIVER MODULE WITH CONNECTOR LEMO 3K.93C.EDW (SMPTE 304M) FOR 1310 and 1550 nm |
| CYGNUS-TX-2S-S1-13 | TRANSMITTER HEAD WITH CONNECTOR NEUTRIK OPTICALCON DUO (SMPTE) FOR 1310 nm |
| CYGNUS-TX-2S-S1-15 | TRANSMITTER HEAD WITH CONNECTOR NEUTRIK OPTICALCON DUO (SMPTE) FOR 1550 nm |
| CYGNUS-RX-2S-S1 | RECEIVER MODULE WITH CONNECTOR NEUTRIK OPTICALCON DUO (SMPTE) FOR 1310 and 1550 nm |
| CYNGUS-TX-2M | TRANSMITTER HEAD WITH CONNECTOR NEUTRIK OPTICALCON DUO MULTIMODE (2 FIBERS) FOR 850 nm |
| CYGNUS-RX-2M | RECEIVER MODULE WITH CONNECTOR NEUTRIK OPTICALCON DUO MULTIMODE (2 FIBERS) FOR 850 nm |
| CYGNUS-TX-4M | CTRANSMITTER HEAD WITH CONNECTOR NEUTRIK OPTICALCON QUAD MULTIMODE (4 FIBERS) FOR 850 nm |
| CYGNUS-RX-4M | RECEIVER MODULE WITH CONNECTOR NEUTRIK OPTICALCON QUAD MULTIMODE (4 FIBERS) FOR 850 nm |
| CYGNUS-TX-4S-13 | TRANSMITTER HEAD WITH CONNECTOR NEUTRIK OPTICALCON QUAD SINGLE MODE (4 FIBERS) FOR 1310 nm |
| CYGNUS-TX-4S-15 | TRANSMITTER HEAD WITH CONNECTOR NEUTRIK OPTICALCON QUAD SINGLE MODE (4 FIBERS) FOR 1550 nm |
| CYGNUS-RX-4S | RECEIVER MODULE WITH CONNECTOR NEUTRIK OPTICALCON QUAD SINGLE MODE (4 FIBERS) FOR 1310 and 1550 nm |
| CYGNUS-TX-HX1080 | TRANSMITTER HEAD WITH CONNECTOR STRATOS HX1080 AND MULTIMODE FIBER FOR 1300 nm |
| CYGNUS-RX-HX1080 | RECEIVER MODULE WITH CONNECTOR STRATOS HX1080 AND MULTIMODE FIBER FOR 1300 nm |
| CYGNUS-LEMO-BOX | WATERTIGHT IP-67 CASE WITH INNER FOAM FOR LEMO KIT |

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| REF. | DESCRIPTION |
|----------------------|--|
| CYGNUS- NEUTRIK -BOX | WATERTIGHT IP-67 CASE WITH INNER FOAM FOR NEUTRIK BASIC KIT |
| CYGNUS-NEUTRIK-BOX-C | WATERTIGHT IP-67 CASE WITH INNER FOAM FOR NEUTRIK COMPLETE KIT, STRATOS KIT HX1080 and 1 MAIN MODULE + 2 TRANSMITTER HEADS + 2 RECEIVER MODULES. |
| CYGNUS-BOX-3 | WATERTIGHT IP-67 CASE WITH INNER FOAM FOR 1 MAIN MODULE + 3 TRANSMITTER HEADS + 3 RECEIVER MODULES. |
| CYGNUS-CARUSB-ADAPT | CAR LIGHTER ADAPTER TO 2 USB (5V, 1A) |
| CYGNUS-USB-CABLE | 1 METRE CABLE USB-MINI USB |
| CYNGUS-POWER | POWER ADAPTER 100-240V ~ 60/50Hz 230mA TO USB 5V 1A C WITH 4 EXCHANGEABLE HEADS (GB / EUROPE/ USA/ AUSTRALIA) |
| NK-NKO2S-S1-A0-1 | NEUTRIK OPTICALCON DUO SMPTE CABLE 1 METRE |
| NK-NAO2S-H1W-A | AERIAL ADAPTER FEMALE-FEMALE FOR OPTICALCON DUO SMPTE |
| FO-CLEANER-12910 | FIBER CONNECTORS CLEANER WITH FERRULE OF 1.25 mm (LC, FTT-AERIAL, NEUTRIK) |
| FO-CLEANER-12926 | FIBER CONNECTORS CLEANER WITH FERRULE OF 2.00 mm (SMPTE 304M) |
| FO-CLEANER-13310 | FIBER CONNECTORS CLEANER WITH FERRULE OF 2.50 mm (SC, ST, FC) |

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PEDIDO/ ORDERING INFORMATION (KITS)

| REF. | DESCRIPTION | IN THE BOX |
|------------------------------|---|---|
| CYGNUS-LEMO-13-KIT | CYGNUS PRO LEMO SMPTE KIT 1310 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX1310-FXW 1 X CYGNUS-RX-EDW 1 X FO-CLEANER-12926 1 X CYGNUS-LEMO-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-LEMO-15-KIT | CYGNUS PRO LEMO SMPTE KIT 1550 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX1550-FXW 1 X CYGNUS-RX-EDW 1 X FO-CLEANER-12926 1 X CYGNUS-LEMO-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-2S-S1-13-KIT | CYGNUS PRO NEUTRIK SMPTE BASIC KIT 1310nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-2S-S1-13 1 X CYGNUS-RX-2S-S1 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-2S-S1-15-KIT | CYGNUS PRO NEUTRIK SMPTE BASIC KIT 1550nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-2S-S1-15 1 X CYGNUS-RX-2S-S1 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-2S-S1-13-KIT-C | CYGNUS PRO NEUTRIK SMPTE FULL KIT 1310nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-2S-S1-13 1 X CYGNUS-RX-2S-S1 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX-C 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER 2 X NK-NKO2S-S1-A0-1 1 X NK-NAO2S-H1W-A |
| CYGNUS-2S-S1-15-KIT-C | CYGNUS PRO NEUTRIK SMPTE FULL KIT 1550nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-2S-S1-15 1 X CYGNUS-RX-2S-S1 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX-C 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER 2 X NK-NKO2S-S1-A0-1 1 X NK-NAO2S-H1W-A |

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| REF. | DESCRIPTION | IN THE BOX |
|--------------------------|--|--|
| CYGNUS-2M-KIT | CYGNUS PRO NEUTRIK OPTICALCON DUO MULTIMODE KIT 850 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-2M 1 X CYGNUS-RX-2M 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-4M-KIT | CYGNUS PRO NEUTRIK OPTICALCON QUAD MULTIMODE KIT 850 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-4M 1 X CYGNUS-RX-4M 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-4S-13-KIT | CYGNUS PRO NEUTRIK OPTICALCON QUAD SINGLE MODE KIT 1310 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-4S-13 1 X CYGNUS-RX-4S 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-4S-15-KIT | CYGNUS PRO NEUTRIK OPTICALCON QUAD SINGLE MODE KIT 1550 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-4S-15 1 X CYGNUS-RX-4S 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |
| CYGNUS-HX1080-KIT | CYGNUS PRO STRATOS HX1080 MULTIMODE KIT 1300 nm | 1 X CYGNUS-MAIN 1 X CYGNUS-TX-HX1080 1 X CYGNUS-RX-HX1080 1 X FO-CLEANER-12910 1 X CYGNUS-NEUTRIK-BOX-C 1 X CYGNUS-CARUSB-ADAPT 1 X CYGNUS-USB-CABLE 1 X CYGNUS-POWER |

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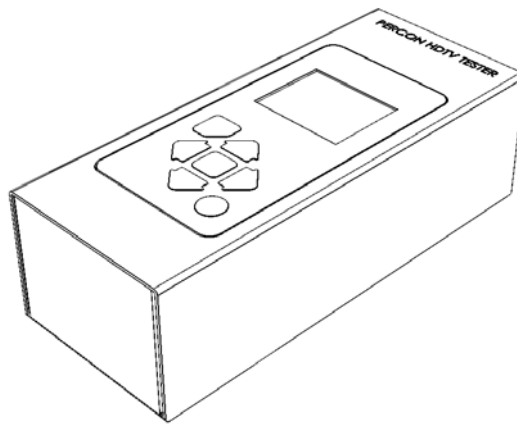
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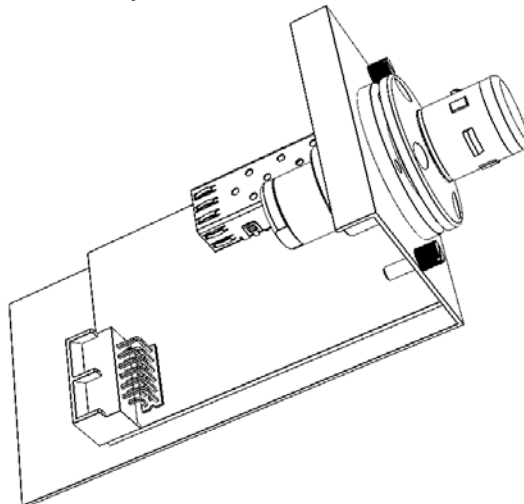
MODULAR BROADCAST HD-FIBER TESTER

COMPOSITION

- The basic configuration of the CYGNUS PRO tester is composed of three parts:
 - o **Main module** *Includes OLED display, membrane keyboard and the printed circuit that run the tester as shown in the following picture:*



- o **Exchangeable head** *with different fiber+ copper or fiber connectors . It has the necessary electronics to adapt the optical signal to electrical signal that will be shared with the main module through signal connectors with signal connectors with conical self-centered system.*



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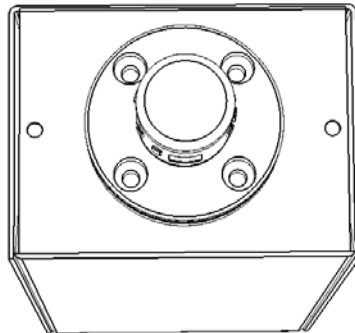
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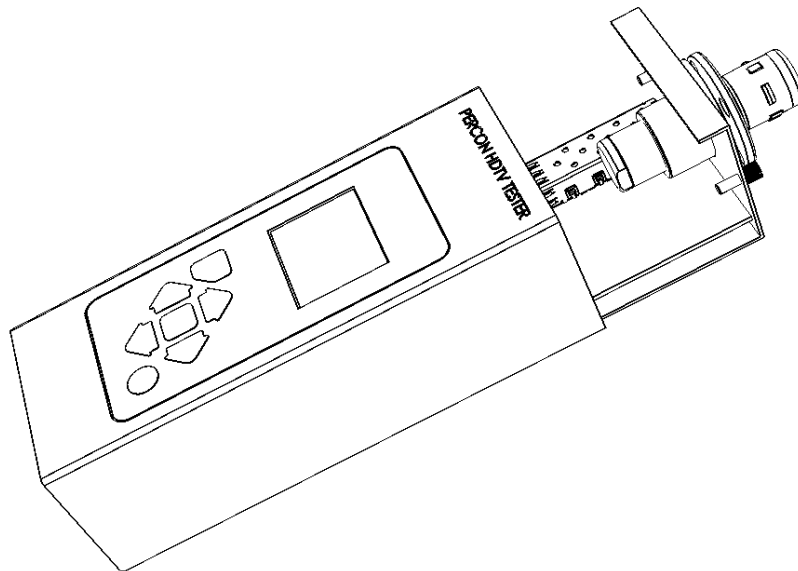
MODULAR BROADCAST HD-FIBER TESTER

- **Receiver/loop** much smaller than the main module with one or several FO connections that link the optical ports of the connector and a resistive shield between the different copper pins.



TESTER ASSEMBLY

- The assembling system follows the design of the rack cases with expansion cards. The system consists of assembling the head in the main module through a slot and fixing it with two captive ribbed screws. The screws can be comfortably tightened manually for a standard fixation or use a standard screwdriver for a stronger fixation.



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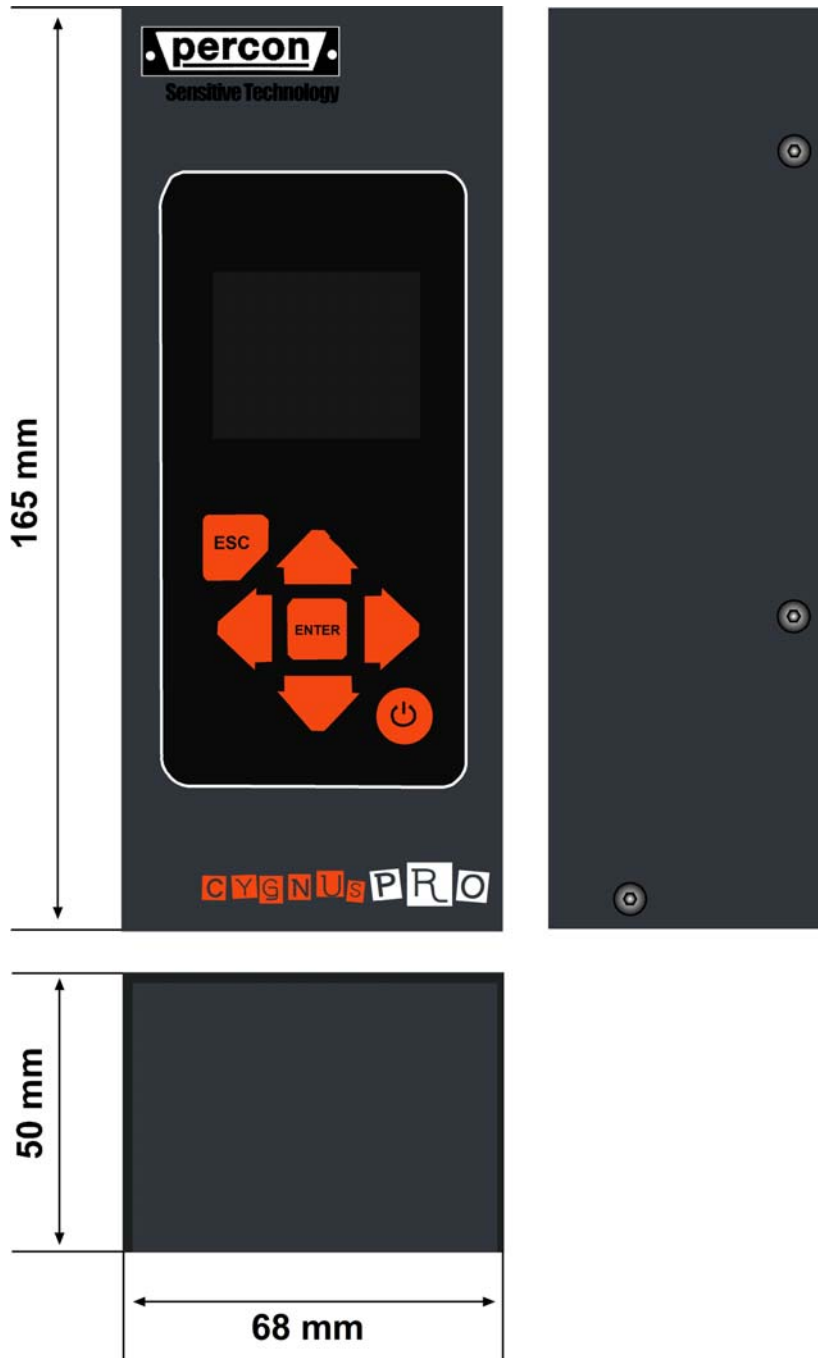
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MAIN MODULE WITHOUT CONNECTOR



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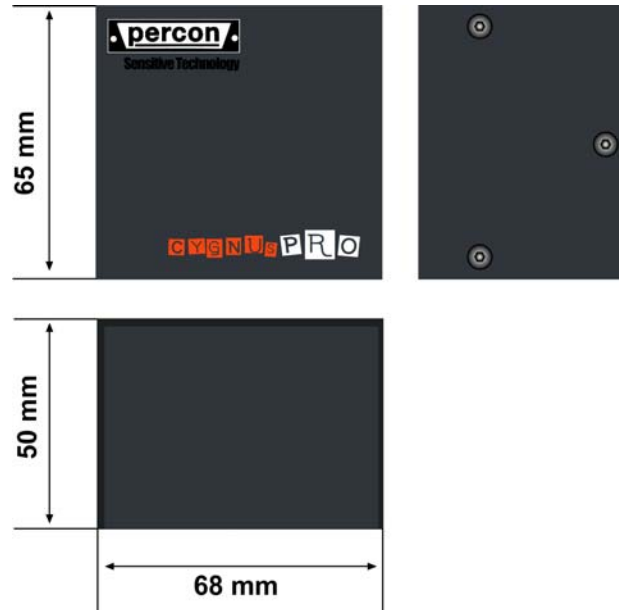
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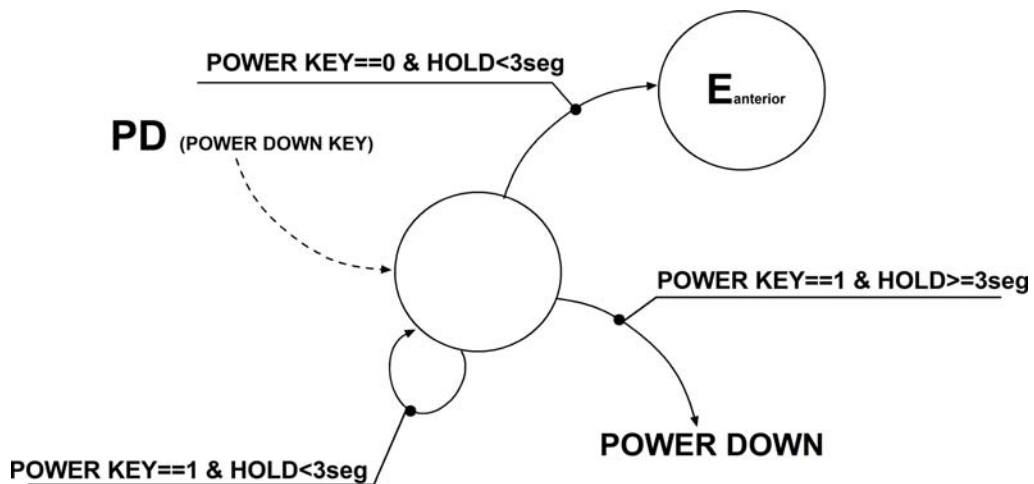
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LOOP WITHOUT CONNECTOR



STATEMACHINE



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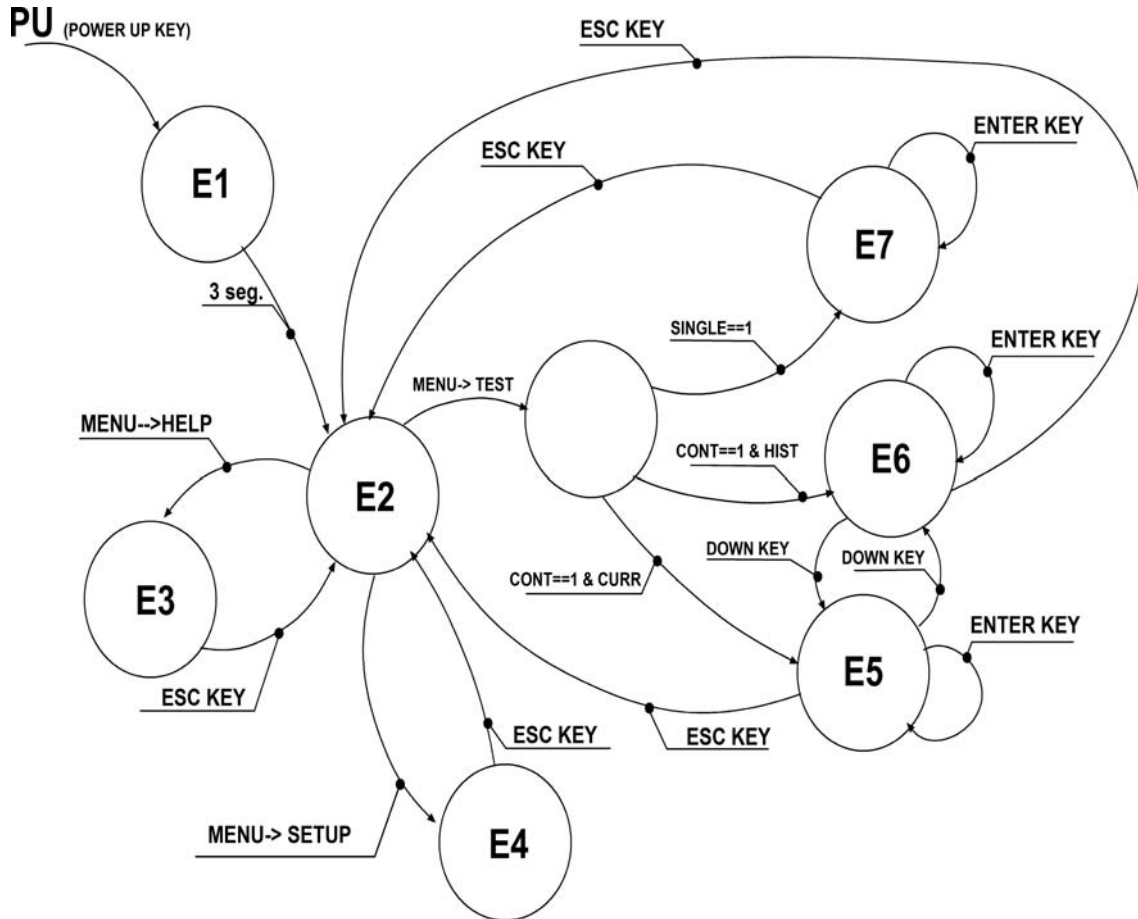
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- **E1: Home/start screen (POWER UP).** The tester model and SOFT version are displayed. In this initial state, the device checks if there is a head inserted in the main module. If there is no head a message appears on the display. If a correct head is detected it checks whether the SFP model is correct; if it is not, a message is displayed and it is not possible to move to the next status until the SFP is the right one

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- **E2: Main menu display.** Text of the options of the main menu and status of the tester. Option selected by key up/down. The selected option is highlighted in bright orange color.



- **Cal:** Indicates the calibration status of the device. Red indicates no valid calibration for the current head, while green indicates that the device is calibrated.
 - **Cont:** defines the type of measurement configured in the device. “**Cont**” defines a continuous measurement of the connection status. “**Sing**” indicates a single measurement of the connection status.
 - **Sav:** indicates whether the auto power off is activated. If it is activated it is shown in green and if it is disabled it is shown in red.
 - **Curr:** indicates the type of continuous measurement. “**Curr**” defines a continuous measurement and shows the current status of the connection at all times. “**Hist**” is the option of continuous measurement that registers the status of the lines in order to see all the detected errors.
 - **Estado de baterías:** indicates the battery status at 20% intervals. When connected to a USB port the charge status is shown by a lighting on the battery icon.
- **E3: Help display (HELP)** shows how to browse the menus.
 - **E4: Configuration display (SETUP)** where you can select the type of measurement (**MODE**), the auto power off (**SAVER**) and the calibration of the device (**CALIBRATE**).



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- **MODE:** You can select the type of measurement: *SINGLE* or *CONTINUOUS*. When it is modified there is a status refresh in the top of the display



- **SAVER:** It configures the auto power off status of the device, as well as its duration. Options include 1 min, 5 min, 10 min, 20 min, 30 min, 1 hour, 2 hours, 3 hours and 4 hours. When it is modified there is a status refresh in the top of the display



- **CALIBRATE:** It indicates the calibration status, as well as the option to calibrate or clear the former calibration to make a new one.



- The device cannot be calibrated if the attenuation is over 4 dB.
- The calibration is associated to the model and serial number of the SFP with the head. When we change the head with the device switched off or we make a hot swap and the SFP serial number has changed, the status will be "not calibrated" if the SFP inserted is correct; otherwise it will inform the user to insert a correct SFP.

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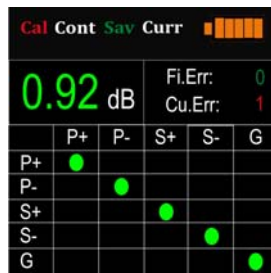
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- After the calibration, the display shows the attenuation of the system once deducted the attenuation of the calibration.

- **E5:** Test display of the device with the measurement configured in continuous mode (**CONT**) and real time (**CURR**). It shows the current status of the copper lines, the attenuation of the fiber and the number of errors detected until that moment.



- When we press **ENTER** we reset the error counter both of fiber (**Fi.Err**) and copper (**Cu.err**).
 - When we press the **DOWN** key we change the measurement from **CURRENT (CURR)** to **HISTORY (HIST)**.
 - If the tester does not detect any fault the counter is shown in green, otherwise the number of errors will be shown in red.
 - The attenuation of the fiber is shown in green up to - 5.99 dB, in orange from - 6 to - 17.99 dB, and in flashing red over 18 dB.
 - A line failure occurs when a line that had been correct changes to malfunctioning status with the exception of the initial status of the measurement display.
- **E6:** Test display of the device with the measurement configured in continuous mode (**CONT**) and history (**HIST**). It shows the cumulative errors in the copper lines, the current status of the fiber and the number of fiber and copper errors detected until that moment.



- When we press **ENTER** we reset the error counter both of fiber (**Fi.Err**) and copper (**Cu.err**) as well as the status of the testing matrix.

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- When we press the **DOWN** key we change the measurement from **HISTORY (HIST)** to **CURRENTY (CURR)**.
 - If the tester does not detect any fault the counter is shown in green, otherwise the number of errors will be shown in red
 - The attenuation of the fiber is shown in green up to - 5.99 dB, in orange from - 6 to - 17.99 dB, and in flashing red over 18 dB.
 - A line failure occurs when a line that had been correct changes to malfunctioning status with the exception of the initial status of the measurement display.
- **E7:** Test display of the device with the measurement configured in **SINGLE (SING)** mode. It shows the errors in the copper and fiber lines. If an error occurs it increases the counter.



- When we press **ENTER** we make a new measurement
- A line failure occurs when a line presents any anomaly at the time of the measurement.
- If no error appears, the counter is shown in green, otherwise it would show the number of errors in red (max 1 error)
- The attenuation of the fiber is shown in green up to - 5.99 dB, in orange from - 6 to - 17.99 dB, and in flashing red over 18 dB.

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