FBO

Dashboard with Data Logger, WiFi/Bluetooth, USB, inertial platform and GPS

Description

The FBO is a new generation dashboard with a particular attention to connectivity and new technologies. The on-board HW equipment provides all the required standard capabilities while provides a platform for future expansions through new firmware limited only by your imagination.

The FBO is dashboard for use either as a stand-alone display unit, or as an integral part of a complete data acquisition and monitoring system for use in the demanding environment found in motorsports vehicles.

The advanced features of the TFT colour display permits to configure windows with an easily personalised screen layout.

As part of the Magneti Marelli data acquisition and telemetry system, the FBO-6 (with internal data logger) can communicate over a CAN network with a range of additional sensor nodes receiving, displaying and logging data. The USB port can be enabled to record on a removable remote USB flash disk. On-board Wi-Fi and BLE connection modules (with internal antennas) allow a large variety of connections, like PC/tablet link for setup and data analysis.

6 degrees IMU platform and GPS module included. A precise Lap-Trigger functionality based on the GPS module is available (optional).

FBO-6 characteristics are completed with composite video input to acquire video from analog camera, 1 input serial link able to acquire HD video data stream and 1 High definition video output able to drive external monitor. Available 6.5” and 8.8” screen size.

Main Features

- *800x480 RGB Transmissive, TFT visible area 142x85 mm*
- *6,5” , 15:9 diagonal, 16.7M colors*
- *TFT viewing angle (U/D/L/R): 89/89/89/89°*
- *High brightness display max 1000 cd/m2*
- *On display: bar graph, gear number, speed, lap time, best lap, lap number and many others information on several pages available*
- *4 high-brightness red/green/blue warning LED for programmable alarms (eg. for gear change with programmable threshold for each gear)*
- *6 single-ended and 2 temperature (PT1000/NTC) inputs*
- *2 low side outputs (alternatively 2 extra digital inputs)*

- *2 digital Inputs*
- *1 lap trigger input*
- *1 composite Video input for external camera*
- *1 headphone Output/ 1 Microphone Input*
- *USB for data recording on removable pendrive*
- *Interface for secondary screen support*
- *Internal 3 axial accelerometer/gyro/magnetometer*
- *USB for data recording on removable pendrive*
- *Wi-Fi 802.11a/b/g/n and Bluetooth 4.1 connectivity*
- *2 Can Lines 2.0B (1 Mbit/s)*
- *1 Ethernet Line 100 Mbit/s*
- *1 USB OTG 2.0 high speed*
- *1 RS232 line*
- *GPS/GLONASS/BEIDU multi constellation global positioning satellite system*
- *Up to 32Gbyte internal data logger*

Benefits

- *Data download via Ethernet link*
- *Transmit internal inputs and channels over CAN bus*
- *Easy to use and configure*
- *Robust design for rugged applications*
- *FBO input-output capabilities can be extended by adding the HDL-240 expansion hub.*

Typical Applications

All race cars/bikes

Technical Characteristics

Inputs	
Single-ended (@ 12 bit)	Up to 6
Temperature PT1000/NTC (SW selectable)	2
Differential microphone	1
Internal GPS LEA-M8 – up to 18Hz	1
Internal 3 axial accelerometer (up to 16 g)	1
Internal 3 axial gyroscope (250°/s)	1
Internal magnetometer	1
Digital Input (Remote push button)	Up to 4
Lap Trigger	1
“Code Load” enable pin	1
Outputs	
Low side output (max. 500mA)	Up to 2
Voltage references (@ 5 V, 50 mA)	1
Headphone	1
Video	
Analog camera input (composite video: PAL, NTSC)	1
HD Video data stream input	1
Remote Display 720p HD (external)	1
Led	
Red/Green/Blue Alarm led	4
Communications	
CAN 2.0B line (500kbit/s or 1Mbit/s selectable)	2
Ethernet line (10/100base T)	1
USB (2.0 OTG) high speed	1
802.11a/b/g/n WLAN 2.4/5GHz (internal antenna)	1
BT/BT Low Energy 4.1 (internal antenna)	1
RS232 line	1
Logic Core	
ARM® Cortex®-A9 multicore (1000 DMIPS)	1
RAM DDR3 (x64)	2 GByte
e-MMC system disk	4 GByte
e-MMC Automotive disk (for data recording)	32 GByte
Time keeper* (internal with Lithium battery)	1
Connectors	
Deutsch Auto sport AS114-35PN (37 Pin)	1
Rosenberger HSD+2 for remote display (720p HD)	1
Rosenberger HSD for video stream input	1
HD-BNC 75Ω (Male) for camera input	1
SMA 50Ω (Male) for ANTENNA GPS	1
Other Characteristics	
Power supply	8 to 16 V
Operating internal temperature	- 20/+85 °C
Protection class	IP 64
Visible area LCD	142 x 85 mm
Dimensions without wiring	183 x 138 x 30 mm
Weight (approx.)	555 g
Logging	
Flash disk memory	up to 32 GB
Logged channels	up to 768
Logging rate	up to 200 kB/s
Sampling rate	up to 1000 Hz

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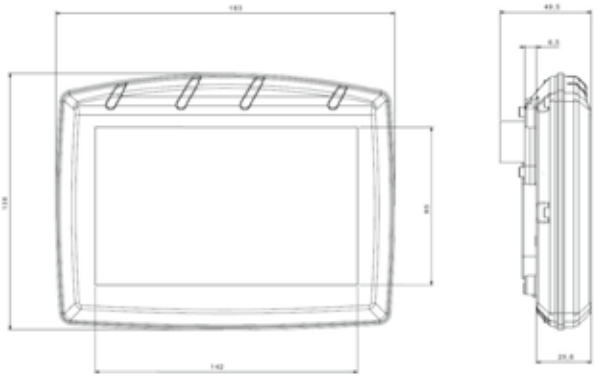
Dimensions



Dimensions (6.5”screen) in millimetres

Application Schematics