Versatile CAN-Based Display

The Series 3D70 7-inch Touchscreen Display for off-highway vehicles.

• Intuitive touch technology to select objects and swipe through screens.
• Responsive PCAP touchscreen recognizes bare and gloved fingers, even when the display surface is wet.
• Easy application creation and integration with VUI Builder (J1939), Qt, or optional CODESYS (J1939, CANopen, and many more).
• Up to 3 Video inputs, up to 2 CAN-bus inputs.
• Powerful processor with 3 second boot time (VUI Builder).
• Scratch resistant/anti-glare cover glass is optically bonded to LCD display for superior mechanical and visual performance.
• Bright, 1000-nit display is backlit, and provides high contrast text and full color graphics for excellent sunlight readability.
• Convenient flush mounting provides modern look and feel, to seamlessly blend with vehicle cab design.
• Armrest, A-post, and dashboard mounting.
• Rugged design for extreme environments.
• Functions as an engine monitor or input device.

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Versatile Display. Many Features.

Flexible. Series 3D70 is available with or without a projected capacitance touch screen. This advanced touchscreen works even when wet or when the user is wearing gloves.

Bright. This 7.0-inch backlit WVGA LCD (800x480) is very bright (1000 nits) providing good daylight readability. It has software controlled LED backlighting and 16 bit color.

Powerful. The powerful embedded computer can monitor and display many events and camera images simultaneously:
- 800MHz
- 512MB RAM
- 4GB storage
- USB 2.0

Useful. Ideal for agriculture and construction vehicle applications, including virtual gauges, diagnostic menus, engine monitor, operator input, fault indicators and service reminders.

Easy to Program. PC-based configuration tools makes application development fast and easy. Drag and drop graphics (supported by Qt and CODESYS), bitmaps, text with the click of a mouse.

Adaptable. Designed for integration into off-highway vehicles. It functions in 12V/24V operation, boots in 3 seconds (VUI Builder) and is sealed against the ingress of liquids and dust.

Rugged. The protective cover lens is scratch resistant glass, not plastic. Optical bonding of the cover glass improves impact resistance.

Adjustable. There are many system interface options:
- Up to two CAN-bus ports
- Up to three NTSC/PAL camera input ports
- Up to two analog inputs
- Up to four digital inputs
- Up to four digital outputs
- One USB 2.0 port
- Ethernet
- Audio Line Out
- Touchscreen

Readable. Optically bonding the display, touch sensor and cover glass reduces reflections. An anti-glare coating further improves readability in bright sunlight.
Versatile Display. All the Specifications.

- Applications can be developed in Grayhill’s proprietary VUI Builder, Qt, or CODESYS - the most trusted cross platform development environments.
- A development kit is offered to provide the hardware and software required to set up a programmer’s workstation for the use with the chosen development environment.

**Display:** 7” color transmissive TFT LCD
- Resolution: WVGA, 800 x 480 pixels, 16 bit color
- Aspect ratio: 16:9
- Orientation: Landscape or Portrait
- Backlighting: LED, 1000 cd/m² or nits
- Microprocessor: Freescale™ i.mx6, 800 MHz
- Flash Memory: 4GB
- RAM: 512 MB DDR3

**POWER SPECIFICATIONS**
- Operating Voltage: 8VDC to 32VDC
- Power Consumption: 7 Watts (typical)
- Standby Current: <1mA

**ENVIRONMENTAL SPECIFICATIONS**
- Operating temperature: ANSI/ASAE EP455 5.1.1 -30°C to +65°C
- Storage Temperature: ANSI/ASAE EP455 5.1.2 -40°C to +85°C
- Thermal Shock: ANSI/ASAE EP455 5.1.3 -40°C to 65°C at a rate of 4°C/min (1 hour at extremes)
- Altitude (Barometric Pressure): ANSI/ASAE EP455 5.2 101.3kPa to 18.6kPa
- Sand and Dust: SAE J1455
- Solar Radiation: ISO 4892-2 Method B
- Wash Down: ANSI/ASAE EP455 5.6 Level 2
- Humidity: ANSI/ASAE EP455 5.13 96% humidity at 35°C for 240 hours
- Salt Fog: ANSI/ASAE EP455 5.9 5% aqueous solution of NaCl @ 35°C and a pH between 6.5 and 7.2 for 48 hours
- Chemical resistance: ISO 16750-5 EP 455 5.8.2
- Ingress Protection: IP67 front and rear with mating connector installed

**ELECTRICAL PERFORMANCE SPECIFICATIONS**
- Maximum load: ANSI/ASAE EP455 5.1.1 T(min)= -40°C; T(max) = +65°C
- Jump start voltage: EP455 5.1.2 36V for 5 minutes; -36V for 5 minutes
- Short circuit protection: EP455 5.10.4 36V
- Reverse polarity protection: EP455 5.10.3 -36V
- Battery-less operation: ANSI/ASAE EP455 5.11.2
- Load dump: ISO 7637-2:2004 Test Pulse 5a Level 1
- Switching spikes: ISO 7637-2:2004 Level 4
- Alternator field decay: ANSI/ASAE EP455 5.11.2

**SOFTWARE DEVELOPMENT TOOLS**
- VUI Builder: Grayhill’s proprietary application for PC
- Qt: Cross platform development app from Digia Plc
- CODESYS: Hardware-independent automation software from 3S-Smart Software Solutions GmbH

**MECHANICAL PERFORMANCE**
- Vibration, Random: ANSI/ASAE EP455 5.15.1 2h each axis 50Hz to 2000Hz
- Vibration, Sinusoidal: ANSI/ASAE EP455 5.15.2 A logarithmic sweep from 10Hz to 2000Hz to 10Hz over a period of 20 minutes for 4 hours in each axis
- Shock: ANSI/ASAE EP455 5.14 11ms half sine pulse of 490 m/s² in 3 axis
- Drop: ANSI/ASAE EP455 5.14.2 Level 1 400 mm onto a hardwood benchtop on all practical edges.

**ESD**
- ANS/ASAE EP455 5.12 Level 1 (Handling), level 2 (Powered)

**CE COMPLIANCE**
- EMC: EN 13309:2010

**ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS**
- Radiated Immunity: EP455 5.16 Level 1
- Conducted emissions: CISPR25 Level 3
- Radiated emissions: ISO14982 Level 4

**POWER SPECIFICATIONS**
- USB: 2.0 host
- Real Time Clock: Internal non-rechargeable battery backup
- CAN: (2) CAN 2.0 B
- RS232: 115K Baud
- Video Input: 3 NTSC / PAL
- Inputs: (4) 0-32 VDC discrete digital; Freq Meas. to 20KHz, Pulse Width Meas down to 50uS
- Outputs: (4) digital 200 mA switched high side
- Analog: (2) 0-5V, 0-10V, 4-20mA, 0-5000 Ohm
DIMENSIONS in mm [inch]

Recommended Mounting Cut Out

VERSATILE DISPLAY. ORDER INFORMATION.

REAR CONNECTOR A & B

Mating Connector:
CON. A: DEUTSCH DT16-18SA-K004
CON. B: DEUTSCH DT16-18SB-K004

CONNECTOR A

CONNECTOR B

YOUR EXPERTS IN CAB CONTROLS

Grayhill specializes in the design, development and production of human interface controls, including:

- Cab user interface design
- Customized control panels
- CAN-bus interface devices

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