BLACKBOX

The ultimate solution for testing your human-machine interface (MMI)

What is?

BLACKBOX

The BlackBox is a specialised test device

from Tritem that combines a manipulator and a camera in one body to imitate the human hand and eyes. This allows the MMI software to be tested in a unified infrastructure.

It is extremely flexible and works with any type of MMI display as long as its physical dimensions fit within the limitations imposed by the instrument (see technical specifications).
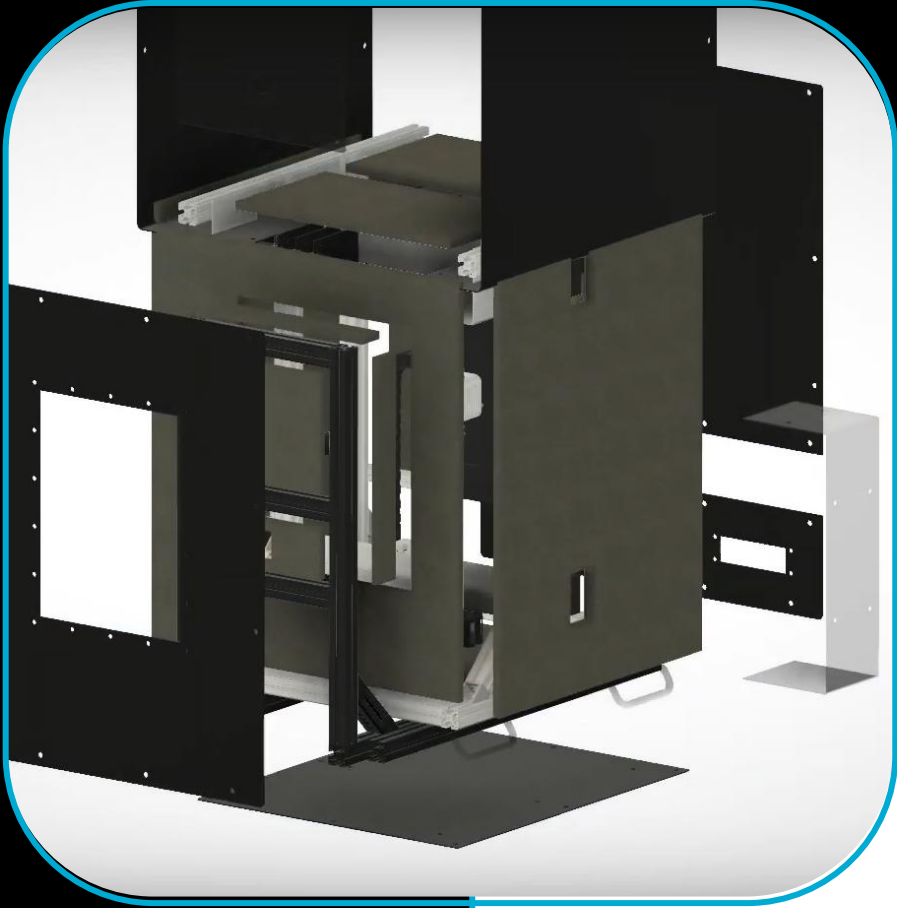
The BlackBox was developed as an instrument for test automation and can also be operated over a longer period of time without any problems.

A comparison with manual test operation illustrates the performance gained by using the BlackBox:

Manual test / BlackBox

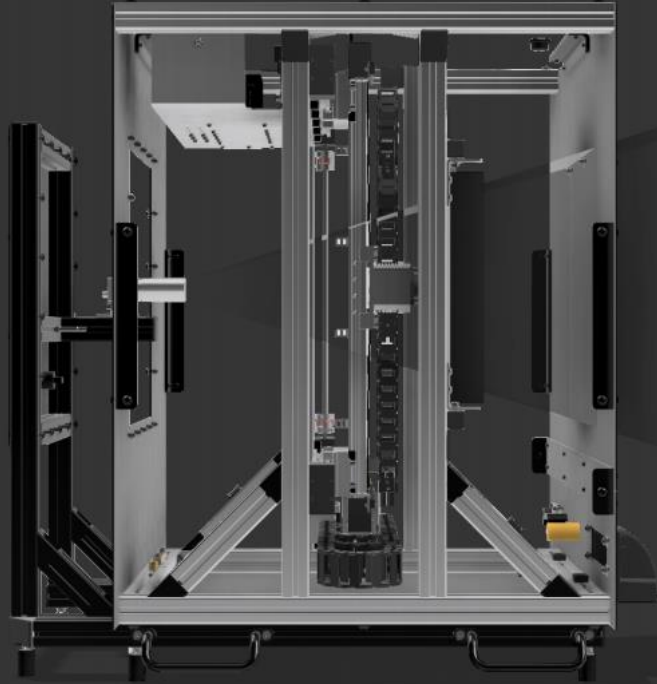8 hours / 5 days a week   24 hours / 7 days a week

Housing and frame

The housing of the BlackBox protects the contents from unwanted light incidence, while adequate ventilation guarantees adequate heat dissipation. Effective sound insulation prevents disturbing noise pollution in the box. The very sturdily designed instrument frame ensures correct test repeatability, while an auto-calibration function maintains touch precision even during the longest test series.

Camera and manipulator

The BlackBox's powerful colour CMOS camera, combined with a low distortion lens, ensures optimum image quality.

The camera mount is adjustable to allow the fixed focal length lens to cover the full area of the installed display and therefore use the entire surface of the sensor.

The manipulator included in the BlackBox can work with touch panels as well as conventional buttons.

Software

The BlackBox includes a specially tuned software package consisting of:

  ▷   A special control application for calibrating the camera and
       manually testing the MMI to allow the user to freely interact with
       the display.
  ▷   A library with an external interface to control the unit via script. This
       allows the BlackBox to be integrated into any existing automated
       test infrastructure.
  ▷   An NI Vision Module – our recommended solution for image analysis,
       OCR and pattern recognition.
  ▷   Device drivers & documentation.

Tech Specs

External dimensions	753 mm x 754 mm x 593 mm
Display dimensions (max)	33 cm x 38 cm
Supported display kind	Touch-sensitive* panels and panels with built-in mechanical buttons

Touch resolution	+/- 0,27 mm
Movement speed	up to 0,7 m/s

Image resolution	12 Mpix
Frame rate	31 fps

Image analysis	NI Vision (recommended)
PC requirements	PC with 1 x USB 3.0 and 1x USB 2.0, Windows 7 or higher
Test tool class	T2**

* resistive touch-sensitive panels are supported as standard, capacitive panels and buttons available after modifications; ** as specified by EN 50128

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