

# CHARM-10CE



## Video Processing Board 84mm x 55mm x 31mm (3.31" x 2.17" x 1.22")

The Vision4ce CHARM-10CE is a standalone video processing stack for embedded video and image processing applications which is designed to host the Vision4ce VMS software. The VMS software includes the field proven DART video tracking software. The CHARM-10CE is based on an Intel Atom embedded processor which incorporates a multicore x64 processor and powerful embedded GPU. Video interfaces are provided for HD and SD video in both analog and digital formats.



Tracking a jet-ski using IR video

### Video Interfaces

The CHARM-10CE has the following video interfaces

#### Video Inputs (Either)

- 2 x PAL/NTSC
- 1 x YPbPr
- 1 x SD/HD/3G SDI

Variants for CameraLink and HDMI video input

#### Video Outputs

- 1 x Display Port+
- 1 x LVDS

### VMS Software

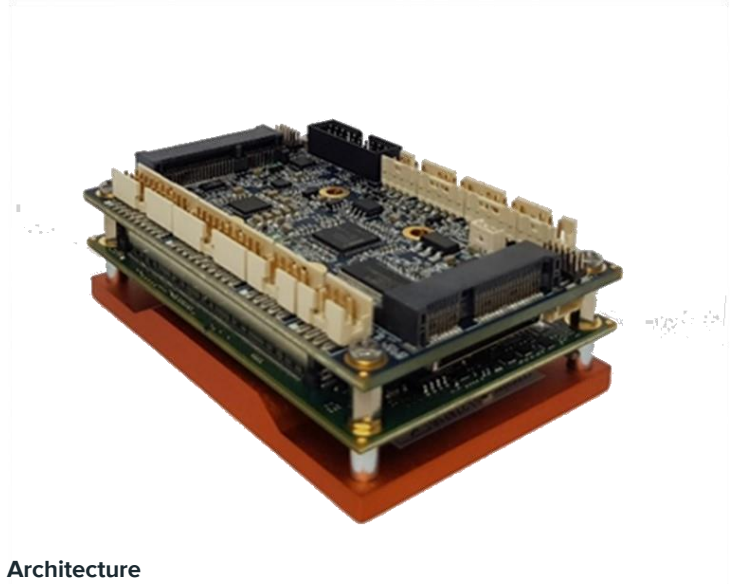
The CHARM-10CE hosts the Vision4ce VMS software which is a comprehensive real time video management software suite for video and image processing.

The standard VMS software capabilities supplied with the CHARM-10CE are:

- Video detection and tracking using Vision4ce DART library
- Video streaming
  - H.264 over MPEG-TS (STANAG 4609)

The following optional capabilities are also available:

- Video streaming
  - H.264 over RTSP
- Video compression and recording
  - H.264, M-JPEG
- Electronic image stabilization
- Panoramic image formation
- Image enhancement
- Camera control
- Servo platform control
- Dual processing channels



### Architecture

The CHARM-10CE uses a mini-PCIe card for high speed, low latency video interfacing combined with the flexibility of the Intel Atom embedded processing which includes the following resources:

- Quad core Intel® Atom™ x5-E3940
- Intel HD Graphics Gen 9 embedded GPU
- Hardware video accelerator for video encode/decode

The CHARM-10CE processes two concurrent streams of standard definition or a single channel of high definition. The output video stream is comprised of low latency video from the selected input combined with processed video and graphics.

### Applications

- Security and surveillance
- UAV & UGV
- Manned vehicles

## CHARM-10CE

The CHARM-10CE is a high-performance standalone video processing board. Video interfaces are provided for HD and SD video in both analog and digital formats. The primary host interface is through an Ethernet port. Multiple serial links are also provided.

### Video Inputs (Either)

- 2 x SD analogue video inputs
  - 1.0V peak to peak into 75 Ohm
  - CCIR, RS170, PAL or NTSC
- 1 x HD analogue video inputs
  - 1.0V peak to peak into 75 Ohm
  - YPrPb
- 1 x HD digital video inputs
  - SD-SDI, HD-SDI, 3G-SDI
  - 480i60, 576i50, 720p50/59.94/60, 1080p25/29.97/30, 1080i50/59.94/60, 1080p50/59.94/60)
- Variants for CameraLink and HDMI

### Video Outputs

- 1 x DisplayPort
- 1 x LVDS

### Data Interfaces

- 1 x Ethernet
  - 1000 Base-T
- 2 x Serial
  - RS232 / RS422 or RS485
- 2 x USB 3.0
- 8 x GPIO

### Power

- 16 - 40VDC
- <20W

### Mechanical

- Dimensions 84mm x 55mm x 31mm (3.31" x 2.17" x 1.22")

### Environmental

- Temperature
  - Operating -40C to +71C
  - Non-operating -55C to +85C
- Humidity
  - 5% to 95% non-condensing
  - Optional conformal coating available
- Shock
  - 30g, 11ms

## Enclosures

The CHARM-10CE is available mounted on an enlarged cooling plate that also offers standard connectors for Ethernet, Serial and Video inputs.



**CHARM-10CE on mounting plate**



**CHARM-10CE in rugged enclosure**

Designed and manufactured in the UK