



VERONICA

REFERENCE DESIGN

A REFERENCE DESIGN MODULE
FOR VR & ROBOTS APPLICATIONS



KEY PARAMETERS

GENERAL PARAMETERS

PARAMETER	VALUE	UNITS	COMMENTS
Power consumption	670	mW	
Module size - X	132.4	mm	Depth only, 10FPS, 3 meters' maximum range
Module size - Y	27.4	mm	
Module size - Z	11.5	mm	
Minimum operating temperature	0	°C	
Maximum operating temperature	50	°C	Ambient conditions are subject to host device design

DEPTH IMAGE GENERATION

PARAMETER	VALUE	UNITS	COMMENTS
Power consumption	670	mW	
Module size - X	132.4	mm	Depth only, 10FPS, 3 meters' maximum range
Module size - Y	27.4	mm	
Module size - Z	11.5	mm	
Minimum operating temperature	0	°C	
Maximum operating temperature	50	°C	Ambient conditions are subject to host device design

TRACKING

PARAMETER	VALUE	UNITS	COMMENTS
Power consumption	670	mW	
Module size - X	132.4	mm	Depth only, 10FPS, 3 meters' maximum range
Module size - Y	27.4	mm	
Module size - Z	11.5	mm	
Minimum operating temperature	0	°C	
Maximum operating temperature	50	°C	Ambient conditions are subject to host device design

SMART SENSOR HUB

The Veronica reference design performs real-time processing, capable of synchronizing, time-stamping and processing inputs from multiple sensors, hence serving as a smart sensor hub.



For further information please contact us at info@inuitive-tech.com
or visit our website www.inuitive-tech.com

The VERONICA is a complete reference design hosting Inuitive's NU4000 3D Imaging and Vision Processor, designed to meet the challenges of HMDs and robots.



- ✓ NU4000
- ✓ IR CAMERAS WITH INUITIVE WFOV LENS
- ✓ I M U
- ✓ PROJECTORS
- ✓ TRACKING CAMERAS

USE CASES

- SLAM-on-chip: Implements the positioning, navigation, tracking, scene reconstruction on NU4000. Results in accuracy along with fast update rate and low power consumption
- Object recognition: Run object recognition algorithms to enable collision avoidance scheme
- Motion sickness reduction: minimize the Motion-to-Photon latency without the need for cumbersome and expensive external sensors (such as a lighthouse)

KEY FEATURES

- High frame rate real-time depth map generation
- 6DoF (scalable to 9) pose estimation and feature tracking for SLAM (Simultaneous Localization and Mapping)

KEY BENEFITS

- Best fit for Head Mounted Displays - low power, small footprint
- Operates at all lighting conditions, from darkness to daylight
- Wide ecosystem of third-party technologies / applications to be used
- Active Stereoscopic IR cameras for Depth Sensing
- Supports Android, Linux and Windows OSs
- Wide Field of View (FoV)
- Seamless integration with customer-designed applications
- Configurable depth sensing range: (0.2 - 1) and/or (0.5 - 4) meters (using the 'Alternating Mode')
- System offload, enabled by DSP cores and a strong general-purpose processor, backed up with ultra-fast hardware accelerators
- Easy-to-use API

BLOCK DIAGRAM

The following figure illustrates a high-level block diagram of the Veronica and its interfaces:

