



Verification Intellectual Property Products

IrDA[®] *e*VC

► *e* Verification Components

Globetech Solutions' *e*VCs are independent, pre-verified, re-usable, verification environments that can be readily integrated into your design.

Maintaining full compatibility with Cadence's Incisive Specman Simulator™, these components provide a solid basis for forming and realizing a complete, reliable and re-usable verification strategy.

► *e* Reuse Methodology

Globetech Solutions' *e*VCs comply with Cadence's *e* Reuse Methodology (*e*RM™). The *e*RM ensures that *e*VCs seamlessly plug-and-play and operate consistently with all *e*RM compliant verification environments by applying consistent terminology, architecture, coding style and packaging.

► Why *e*VCs?

There are many advantages to choosing a Globetech Solutions *e* Verification Component:

- **Time to silicon** - dramatically reduce the verification cycle
- **Flexibility** - quickly create and fine tune a variety of test scenarios
- **Risk Management** - pre-verified components help reduce problem space
- **Re-usability** - spend your time creating new tests, not environments!
- **Full Support** - integration, training and support to ensure your success

► The IrDA *e*VC

The Infrared Data Association (IrDA[®]) *e*VC is a powerful verification bundle built around the IrDA Physical Layer Specification. It can be integrated into a variety of testing scenarios involving a processor and an infrared controller device, making it ideal for embedded processor applications or system-on-chip environments.

► Features

- ☑ Compatible with IrDA 1.0 SIR and IrDA 1.1 MIR/FIR
- ☑ Written in *e* and fully compatible with Specman Elite - HDL independent
- ☑ *e*RM compliant - Plug-n-Play
- ☑ Infrared interface agent provides constrained-random IrDA frame sequence generation
- ☑ Error injection including framing, CRC, physical layer, pulse-width and frame-abort errors
- ☑ Built-in data scoreboard support on infrared interface
- ☑ Functional coverage analysis for Coverage-Driven Verification (CDV)
- ☑ Interaction pulse support
- ☑ Complete and configurable error reporting
- ☑ Adjustable levels of tracing and verbosity
- ☑ Highly configurable and adaptable

▶ IrDA eVC Structure

The IrDA eVC comprises two modules: the *IrDA Agent* and the *Monitor*. This structure allows for maximum flexibility in designing testing scenarios, as well as scalability, control and isolation (**Table 1**).

▶ Verification Using the IrDA eVC

The IrDA eVC's extended capabilities make it easy to exercise a variety of designs-under-test, providing full metrics for error conditions and functional coverage.

Furthermore, employing the IrDA eVC in your current design verification, ensures availability of a solid tool based on an industry standard protocol that can be re-used for future projects.

In **Figure 1**, the IrDA eVC is used to verify the IrDA interface of a larger device under test (DUT). In this scenario the infrared IrDA agent initiates constrained-random sequences to the DUT. The *monitor* examines traffic, scoreboards data and utilizes the *checker* for adherence to the IrDA protocol. The *coverage* module ensures that all aspects of the protocol are exercised. The eVC makes no assumptions as to the internal device's architecture or processor interface, making it applicable to virtually any type of IrDA device.

▶ Benefits of the IrDA eVC

- ☑ **Universal solution:** A powerful verification environment which can be used with any IrDA SIR/MIR/FIR device
- ☑ **Solid technology:** Built on best-of-breed technology and methodologies by Cadence Design Systems
- ☑ **Proven quality:** In strict compliance with industry quality standards
- ☑ **Good maturity:** Used in many silicon-proven projects
- ☑ **Maximum reuse:** An eRM-compliant solution that guarantees reusability at the block, core and system levels

▶ Further Information

For further information or to request an evaluation, please visit us online at www.globetechsolutions.com or call us at +30 23 10 31 35 53.

Component	Function
IrDA Agent	Injects constrained-random sequences for IrDA frames into the DUT by means of the <i>Sequence Generator</i> and <i>BFM</i> modules.
Monitor	Monitors traffic on the infrared interface of the DUT. It also provides error checking, data score-boarding and coverage information.

Note that the monitor element is required for all testing scenarios; all other elements are entirely independent and can be deployed separately.

Table 1: Functional Description of IrDA eVC Components

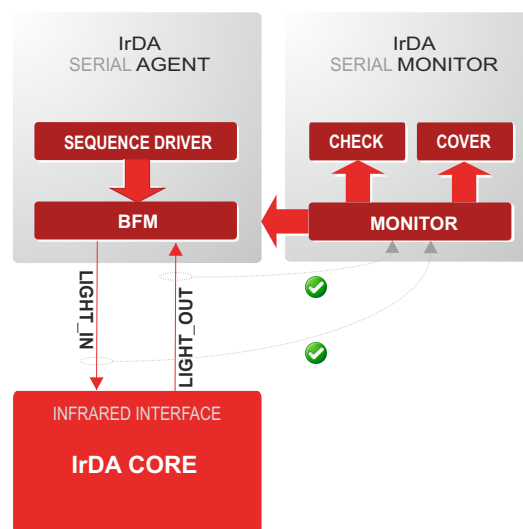


Figure 1: Verifying an SoC IrDA interface with the IrDA eVC
The Serial Agent is used to drive infrared frames into the IrDA interface. The Monitor is used to check half-duplex communication and score board data on both the transmit and receive paths (not shown here).

Maturity	First Release	eRM Compliant	VPA Enabled	SB Optimized
Good	June 2003	✓		

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