

## E-cast: Take the Next Step with ARM Accreditation

**Speaker(s):** Greg Arnot (Director of Marketing Partner Enablement Group, ARM); Chris Shore (Training Manager, ARM)

There's no doubt about it: having a title, can help you get a better job. ARM Accredited Engineer is one title that could be your passport to that better...

# Embedded COMPUTING DESIGN

Search articles, news, and products...



[Articles](#) [Authors](#) [White Papers](#) [Products](#) [News](#) [Blogs](#) [5-Minute Interviews](#)

**NEW!** Why wait for updates here? Try our daily newsletter:

[Home](#) [Automotive](#) [DIY](#) [Industrial](#) [IoT](#) [Dev Tools and OS](#) [Hardware](#) [Networking](#) [Processing](#) [Storage](#) [...More Topics](#) [RSS](#)

[E-Letter](#) [Webcasts](#)

Like

Tweet

Share

Email

Print

WHITE PAPER



### The Industrial Grade DRAM Reliability Testing Improvement

**Author:** ATP Electronics

The new testing system includes the "Automatic Test Equipment" capability, further strengthening the quality and reliability of ATP's Industrial Grade DRAM Modules

PDF

## 10 Internet of Things design considerations

ADAM JUSTICE, GRID CONNECT

Connecting products to the Internet of Things (IoT) is essential to manufacturers looking to stay competitive within their industry. Adding IoT capabilities gives consumers more features. It also allows the manufacturer to stay connected with their customer while dis-covering new product use cases and applications that open them up to new revenue streams. When designing your first IoT device, there are 10 things to keep in mind:

### 1. Cost

"Smart" or IoT products help consumers and manufacturers alike, but they cost more. Both Ethernet and wireless technologies have come down below \$10, so consider networking in your next product.

### 2. Network

**The network technology you chose for your IoT product has distance and gate-way/router issues. If you need to get to the Internet then you need Ethernet/Wi-Fi; if you are self-contained in a room or building then ZigBee, Z-Wave, and Blue-tooth are available. Remember all wireless technologies need FCC certification.**

### 3. Features

**With an IoT connected product, companies can now add features to their products that were not possible or imagined. These features can get you direct access to the customer for updates, maintenance, and new revenue opportunities.**

### 4. User interface

**How the user interfaces with a product is important. Are you going to use buttons, LEDs, or a display on the product? Also what web and app**

Free Subscription

[See the Current Issue](#)  
[Archived Issues](#)



E-cast

How to Build the Connectivity Architecture for the...

E-cast

Why is DDS the Right Communications Standard for...

ADVERTISEMENT

Safari Power Saver  
Click to Start Flash Plug-in



CONNECTIVITY

interfaces are you going to provide?

#### 5. Power

One of the first decisions should be the power source. If the device will be powered by batteries then all design decisions must consider how to preserve power. Many networking technologies will not be a good fit with battery power. Frequency of communication does have an influence on power selection, too.

#### 6. Size

Size matters. Consider how the network will impact the size of the device. Connectors and antennas required by some networks will add to the size.

#### 7. Antenna

All wireless networks use an antenna, internal or external to the product. The trend is to move the antenna inside the enclosure if it is plastic. All metal enclosures would require external antennas.

#### 8. Cloud

Cloud applications provide products a user interface to the product and the data. There are private and public clouds. Most clouds have a standard API for developing your application.

#### 9. Interoperability

Does your product need to communicate with other vendors' products? If so, then you need to adopt a standard set of protocols, such as Apple's HomeKit, to communicate with other products.

#### 10. Security

Security is becoming a major issue, so you need to design in as many layers of security as feasible. SSL and password are the minimum.

[Read additional details about the 10 design considerations for IoT.](#)

Adam Justice is vice president and general manager of [Grid Connect](#), a manufacturer and distributor of the ConnectSense product line of wireless sensors.

THIS GUEST BLOG WAS PUBLISHED ON FEBRUARY 6<sup>th</sup>, 2015.