

■ Founded in 1996

- Fabless semiconductor company
- USA, Japan, Hong Kong and Israel locations



■ Mission

- Provide secure, simple to integrate, cost-effective IP connectivity solutions for M2M applications

■ 45 employees with expertise in

- VLSI design, Security, Embedded networking, M2M applications

■ Significant experience & installed base

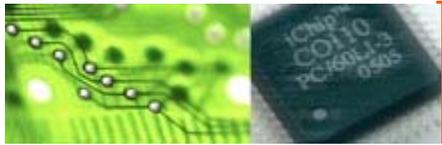
- More than 1 million chips in the field
- 270+ design-wins



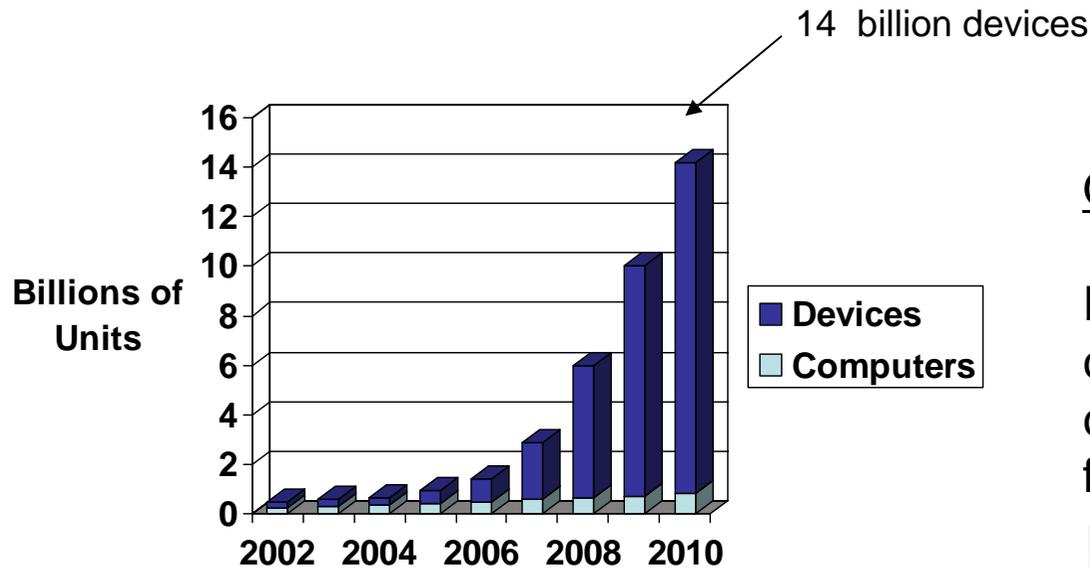
■ Strong management & investors

- Founders previously co-founded M-Systems (acquired by SanDisk)
- Experienced semiconductor CEOs (Galileo/Marvell, DSPG) as both investors & advisors





“By 2010, 95% of all things networked will be devices other than computers” *Forrester Research*

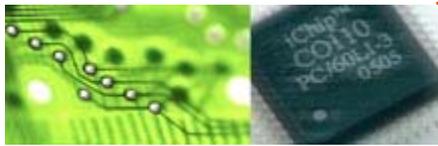


Source: Forrester Research

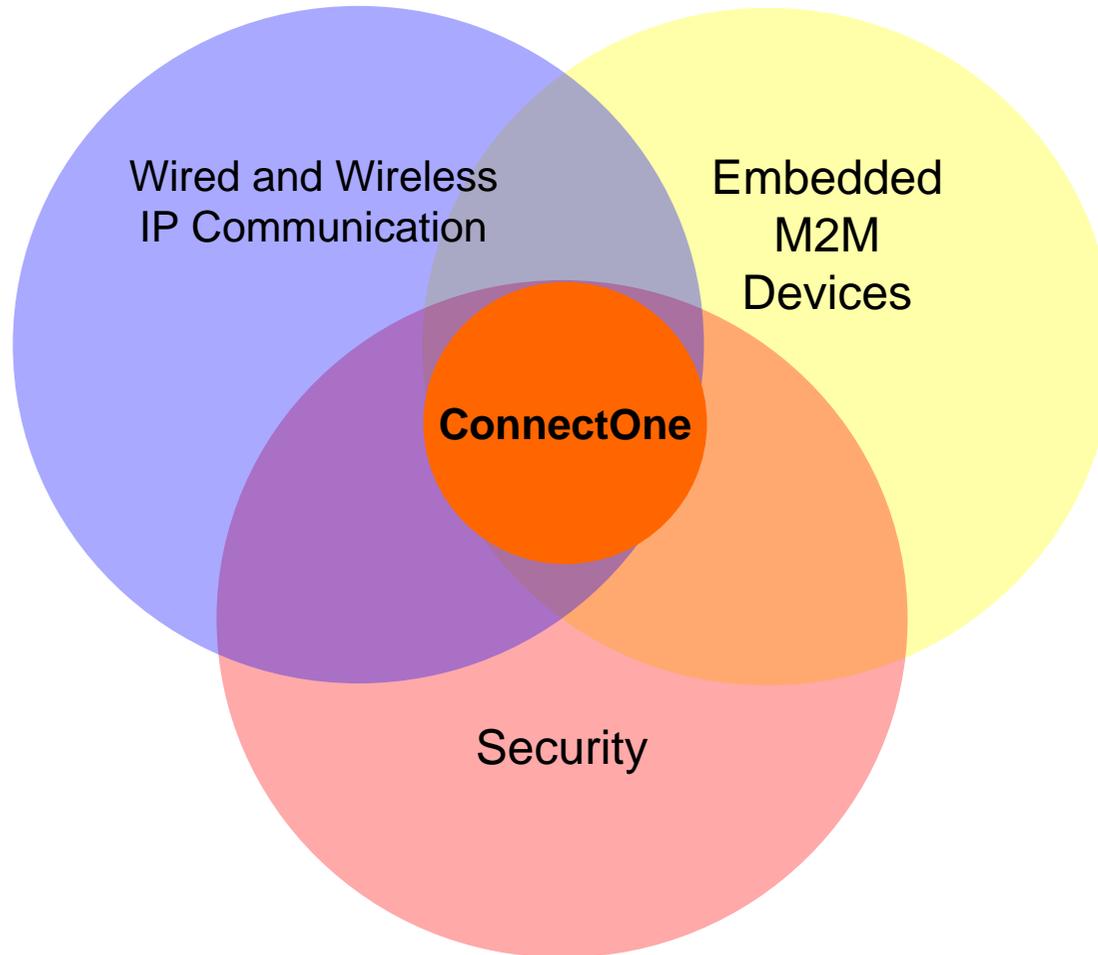
Our Mission:

Provide simple-to-integrate, cost-effective, end-to-end IP connectivity chips and solutions for M2M applications

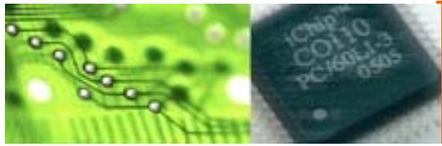




Connect One “Sweet Spot”



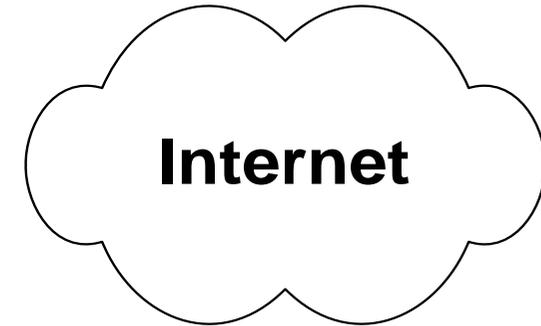
...where IP communication and security meet M2M devices



Why Use Connect One Solutions ?



Tough Connection

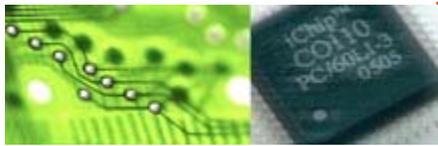


Manufacturers:

- Are not Internet experts
- Want to easily connect their current HW
- Need secure solutions
- Want minimal change to their application
- Don't want to maintain Internet protocols
- Want low upfront and ongoing cost
- Want standards-based solutions

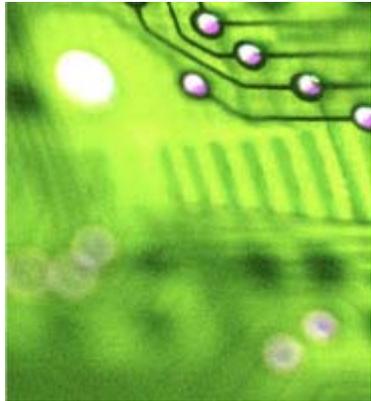
The Internet is:

- Not their prime business
- Complex: more than just TCP/IP
- Insecure: Attacks are abundant
- Inconsistent: ISPs, servers
- Dynamic: constantly in flux



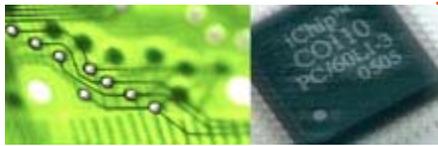
What we bring to the table

- **We facilitate IP-enabling of non-PC devices**
 - For some customers, we enable this transition
- **Complete product range for M2M IP communication**
 - Transparent transition from boxes → modules → chips as volumes grow
- **Complete offloading of communication tasks**
 - Simplest CPU/MCU can be used to drive complex operations
- **Best of breed security M2M solutions**
 - Impenetrable firewall, encryption offloading
- **Our economies of scale mean competitive prices**
 - Connect One designs & makes its own silicon and firmware

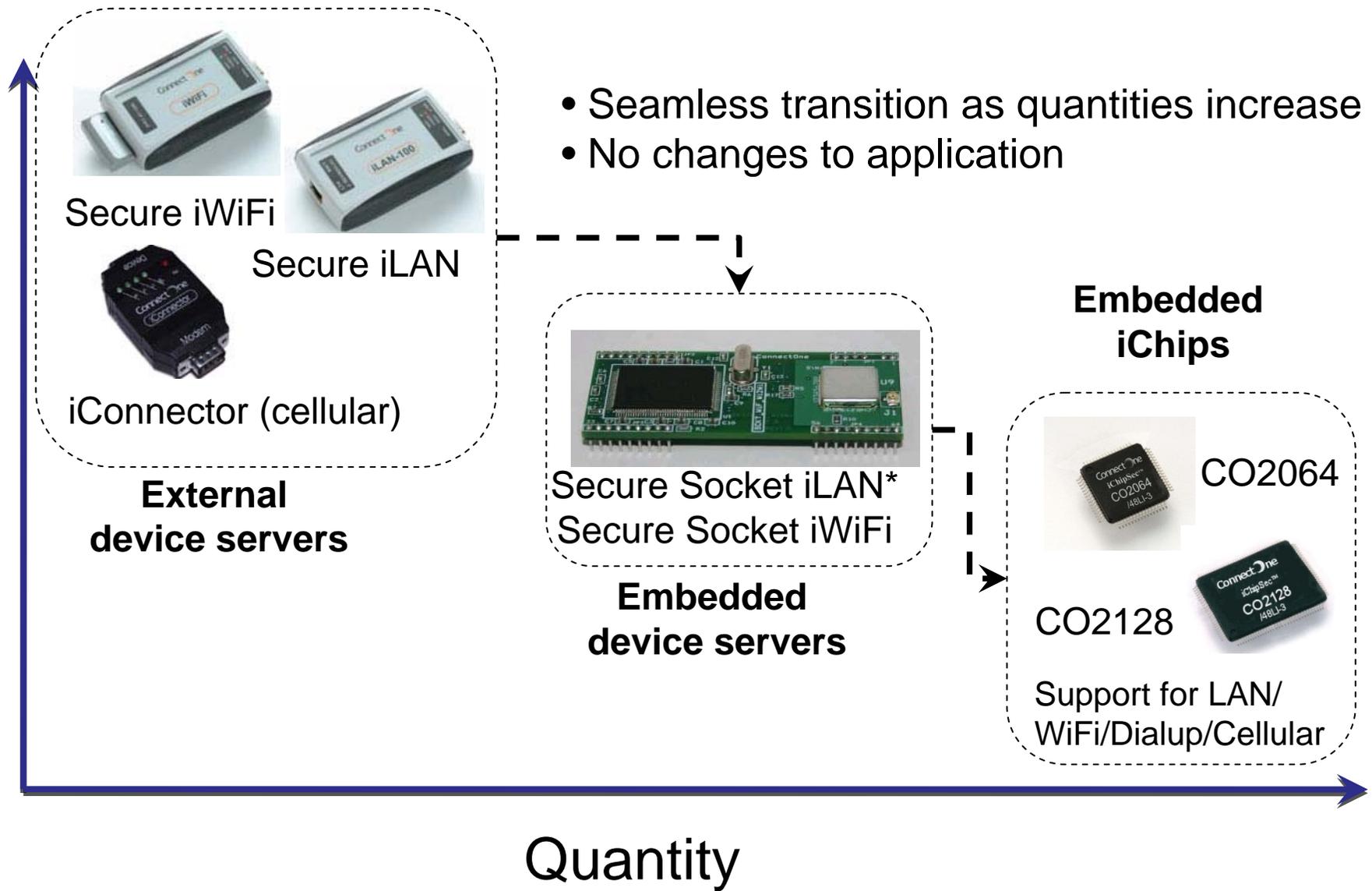


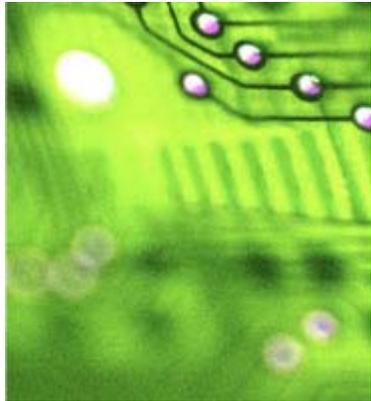
The Products

Connect One
The Device Networking Authority



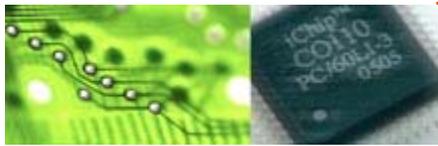
Connect One solutions - summary





iChip and the AT+i Protocol

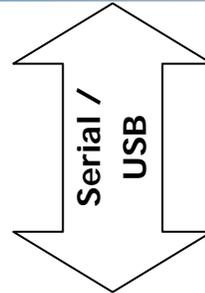
ConnectOne
The Device Networking Authority



IP Controller Concept

Application MCU/CPU (8-32 bit)

Simple text-based AT+i
Protocol used to
manage iChip



The iChip is independent of
Application CPU and O/S

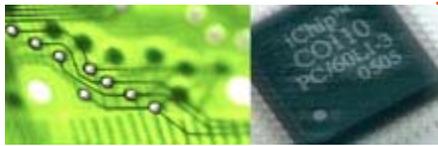


Design-in time is typically
one man-month



All communications/encryption
Tasks offloaded to the iChip

Dialup/cellular, 10/100BaseT or 802.11b/g WiFi



■ Configuring the iChip

```
>AT+i  
I/OK
```

```
>AT+iWLSI="demo_ssid"  
I/OK
```

```
>AT+iWLPP="demo_passphrase"  
I/OK
```

```
>AT+iDIP=192.168.1.10  
I/OK
```

```
AT+iIPG=192.168.1.1  
I/OK
```

Set the Wireless
SSID

Set the WPA passphrase

Set the IP address
(can also be DHCP assigned)

Set the default gateway



- Application event: Intrusion detected by security system

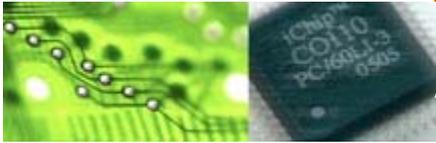
```
>AT+i  
I/OK  
>AT+iTOA=centraloffice@company.com  
I/OK  
>AT+iSBJ='Intrusion attempt detected!!!'  
I/OK  
>AT+iEMA: Intrusion detected in 'gate #2' in  
site 'Airport_City' by keypad #4  
  
.  
  
I/OK  
I/DONE  
  
>
```

Recipient Address

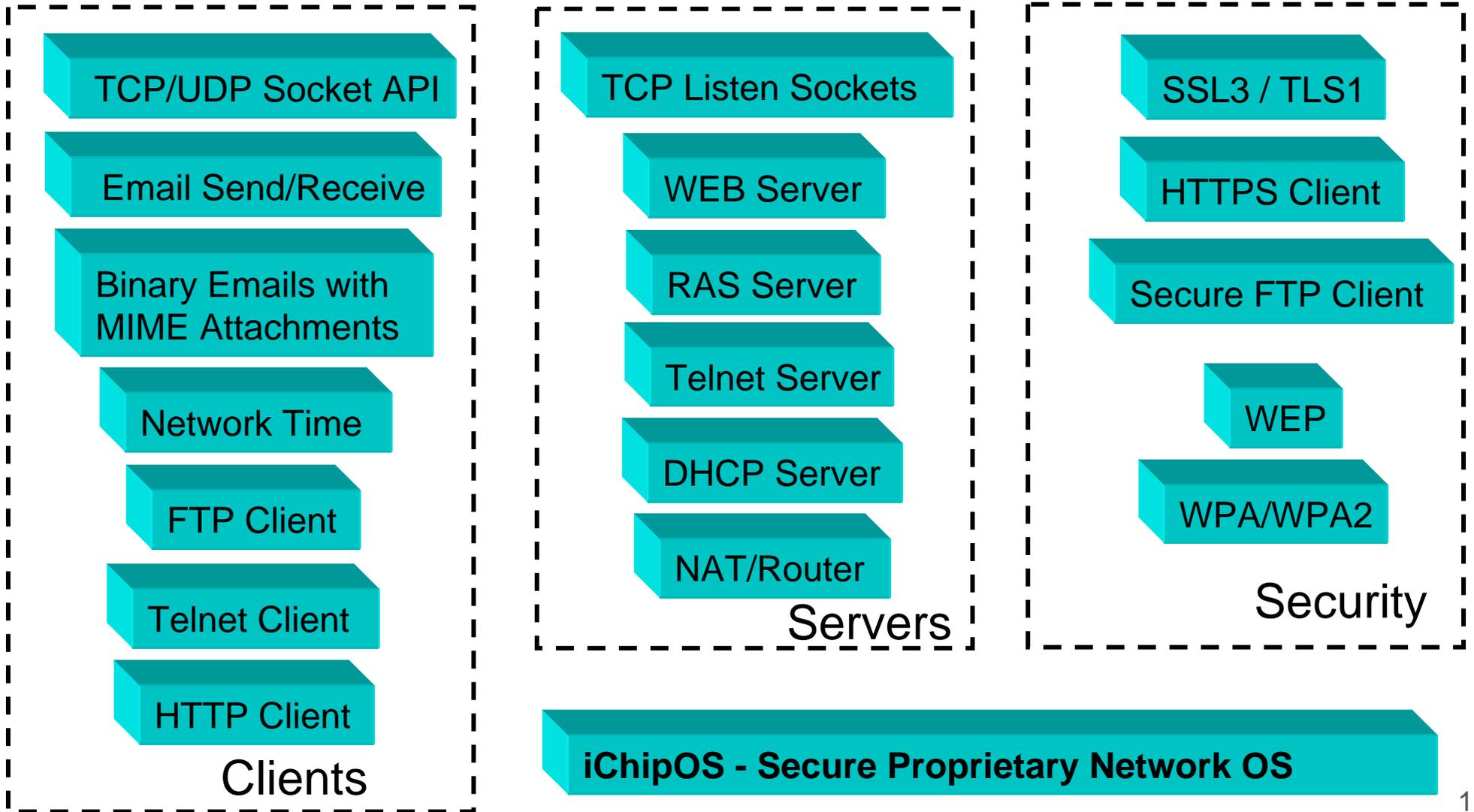
Email Subject String

Email Body (MIME attachments possible, not shown)

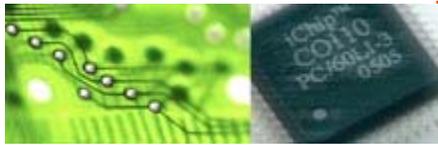
Email was Sent to Destination



Application Level Protocols

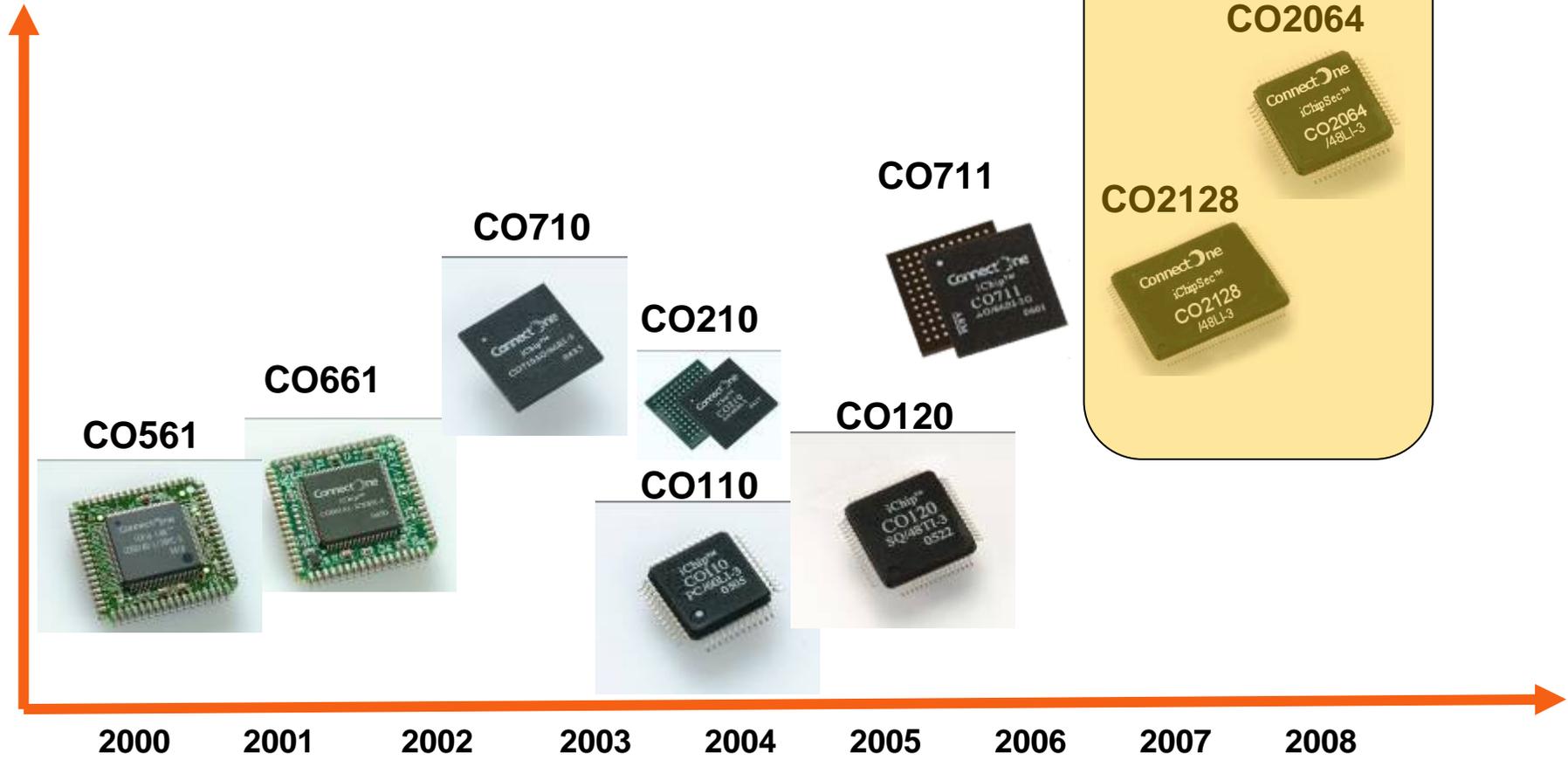


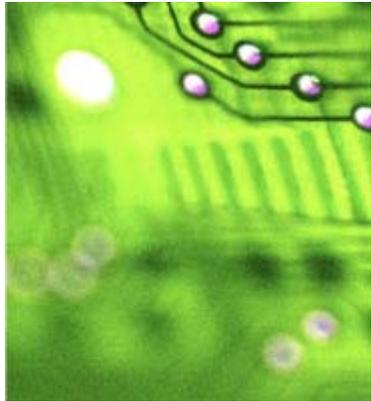
Full RFC compliancy



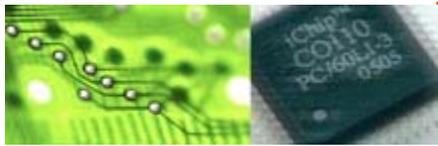
Technology evolution

Complexity/
Integration level

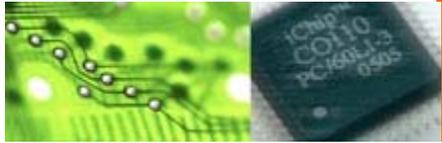




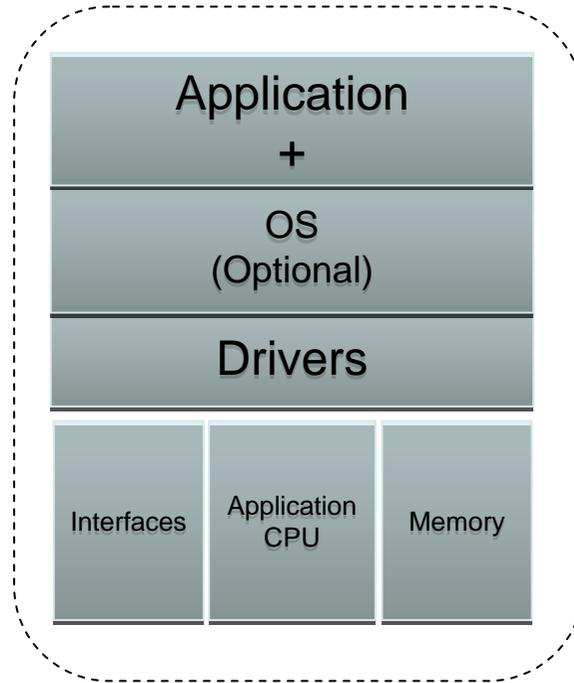
Selling points



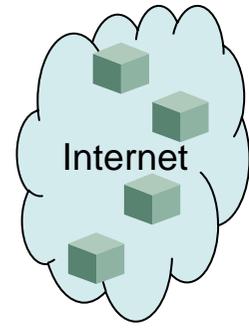
- The internet is a dangerous place
 - Connecting outwards means others can connect to you
 - Do you have a firewall on your PC?
- The challenge
 - Using application CPU for networking brings the Internet right to the app
 - Open source OS particularly vulnerable to attacks
 - Encryption in software is a complicated, CPU consuming task
- iChip benefits
 - iChipOS is a proprietary, hardened operating system
 - Complete isolation of the host CPU from the Internet
 - Hardware encryption offloads CPU



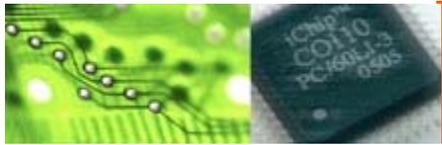
Using CPU for networking



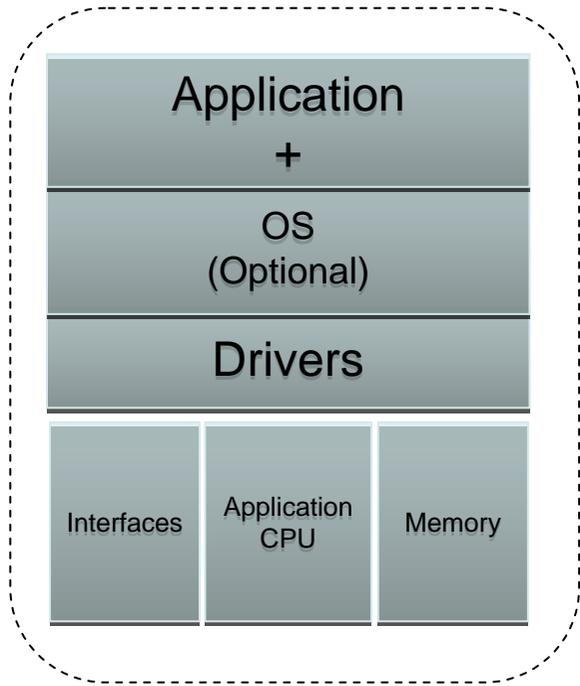
Ethernet/ Wi-Fi/Dial-up/Cellular



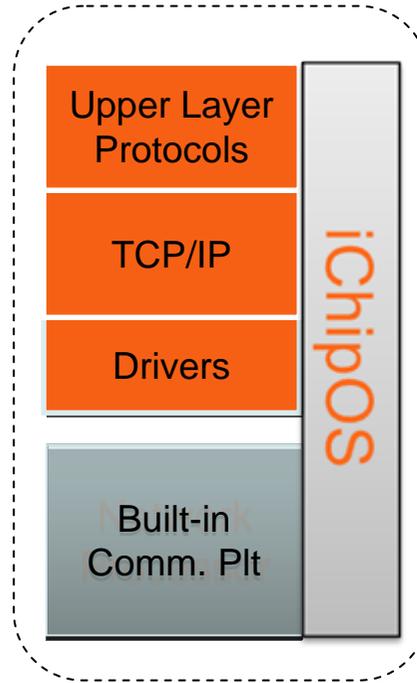
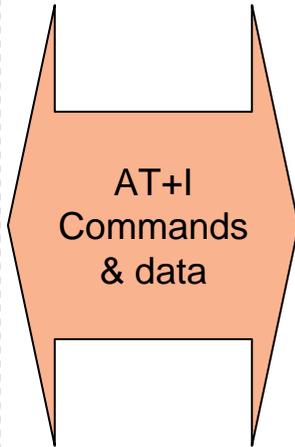
Host CPU



iChip security benefits - SecuraGAP

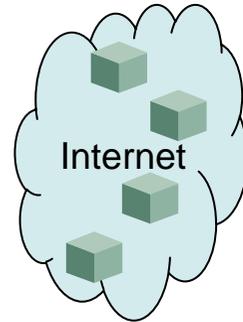


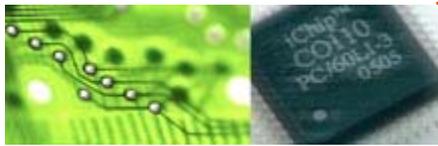
Host CPU



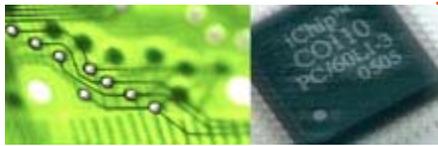
iChip

Ethernet/ Wi-Fi/Dial-up/Cellular



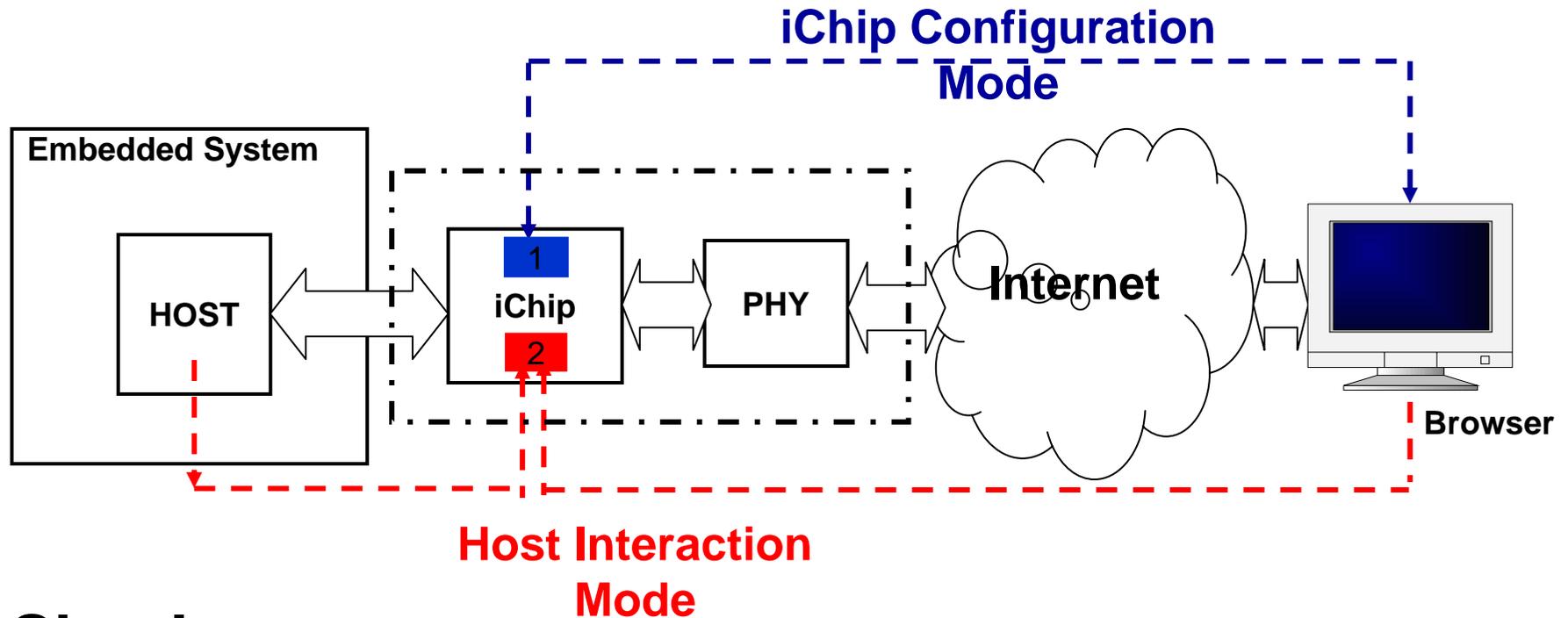


- **Benefits**
 - The de-facto wireless standard
 - Inexpensive components
- **The challenge**
 - WiFi chipset vendors do not provide support for <1M units/month
 - Self development/porting WiFi drivers, security may not be possible for some customers
- **Socket iWiFi**
 - Immediate access to Wifi, zero development
 - Smooth upgrade through evolving WiFi standards (Pinout/API compatible)
 - Facilitates device certification
 - Seamless transition to chip-level design when quantities justify



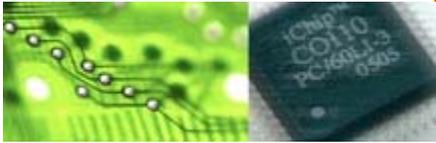
■ iChip has 2 built-in fully functional web servers

- iChip configuration and management
- User-defined for application management



■ Simple

- Simply upload webUI content to iChip
- External content also possible (e.g. on external Flash)



Example – Smart card reader

Terminal Properties - PCounter_Value_Loader_on_Alans_Desk

[Overview](#)

[User Interface](#)

[Network](#)

Override Mode:

Override Mode:

Off ▼

Override UserName:

Override Password:

Display

LCD Contrast:

Not Available

Language:

English ▼

User Display:

Account Balance ▼

Currency Symbol:

None ▼

Currency Separator:

00.00 ▼

Keyboard Beep:

Off ▼

User Logon

Logon Timeout (s):

5

Username Type:

Alphanumeric ▼

Password Type:

Alphanumeric ▼

Require Network Password:

No ▼

Client Code Input:

None ▼

Client Code Type:

Numeric ▼

Subcode Input:

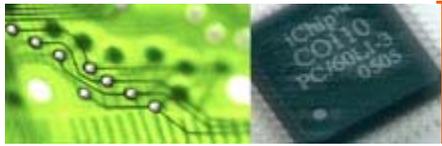
None ▼

Subcode Type:

Numeric ▼

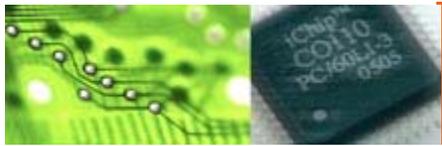
Card/Short ID Association:

Off ▼



Example – Remote control for heated floors





Example – Remote control for heated floors

Welcome to WEB•HOME

Log in

User

Password

[Forgot my login](#)

A vertical thermometer is positioned on the left side of the page, with a blue liquid level and a red top section.



Example – Remote control for heated floors

The screenshot displays a web interface for 'Seaside Cottage' with a navigation bar at the top and a large thermometer graphic on the left side. The main content area is divided into four sections: Control, Alarm status, Calendar jobs, and Room status. The Control section includes radio buttons for 'Active' and 'Standby' for the heating system, and 'On' and 'Off' for the water heater. The Alarm status section shows 'No alarm' for the heating system, power failure, and burglar alarm. The Calendar jobs section shows a job for 'Heating system' on '15-okt-05 14:00' with the instruction 'Switch to active'. The Room status section shows temperatures for Dining room (22.5 °C), Bathroom (24,5 °C), Bedroom (20.0 °C), and Guest room (20.5 °C). The bottom of the interface has buttons for 'FINISH', 'CANCEL', 'Update', and 'LOG OUT'.

| Control | Calendar jobs | Room status |
|---|------------------|----------------------|
| Heating system: <input type="radio"/> Active <input checked="" type="radio"/> Standby | Heating system | 15-okt-05 14:00 |
| Water heater: <input type="radio"/> On <input checked="" type="radio"/> Off | Switch to active | Dining room: 22.5 °C |
| Alarm status: No alarm | 15-okt-05 14:00 | Bathroom: 24,5 °C |
| Power failure: No alarm | | Bedroom: 20.0 °C |
| Burglar alarm: No alarm | | Guest room: 20.5 °C |