

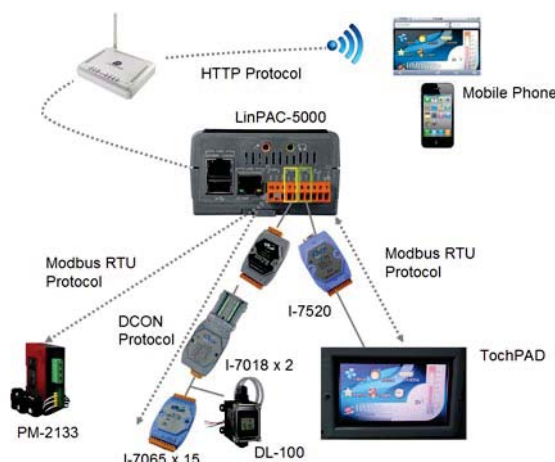
# The LinPAC+TouchPad Amphitheater: Automation Makes a Room More Useful

By Jerry Chiu

*Mobile devices have spread everywhere in recent years. Notebooks, tablet computers, and smartphones have become increasingly connected with our daily lives. Extending control to these handheld electronics has become a priority so to increase accessibility.*

Using LinPAC and the TouchPAD controller together in the amphitheater along with other modules allows for complete control over the whole system, as well as detailed sensors levels on power consumption, temperature, and humidity. Not only can all this be done through the TouchPAD (connected via HMI to the LinPAC controller), but it can also be done on your mobile phone or computer; the if the LinPAC is connected to a wireless network, it's as easy as pointing your web browser to the appropriate page to access a control panel. Nor do the TouchPAD and separate device interfere with each other; they can be used separately, one without the other, or together in parallel - and where one makes a change, the other immediately updates its display to reflect as such: a very convenient feature.

## System Architecture and Behavior



Module	Features
LinPAC-5000	controller
TPD-430	Touch HMI display
I-7065 x 15	fluorescent lamps, embedded switches, air conditioning, air flow control
I-7018 x 2	measures air outlet temperature
DL-100	measures indoor temperature and humidity
PM-2133	measures indoor electricity usage
WiFi AP	serves as a network base station

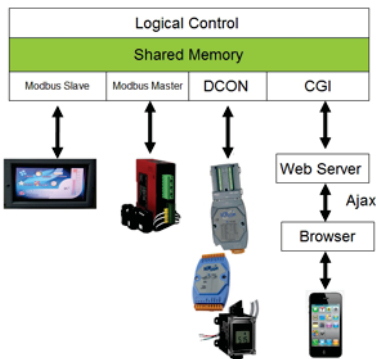
The LinPAC-5000 is the heart of the system. It's a palm-sized Linux-based controller; and as with most Linux systems, it's easily customizable to give users a great deal of flexibility to meet many different needs.

### The LinPAC-5000:

- ◆ operates via the DCON protocol, and answers to the I-7000 module and DL-100 temperature + humidity module
- ◆ reads through the modbus master PM-2133 meter values
- ◆ provides the TPD-430 modbus slave communication

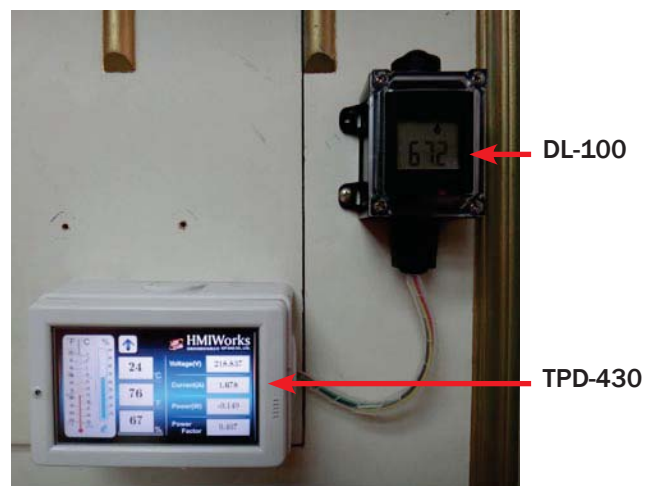
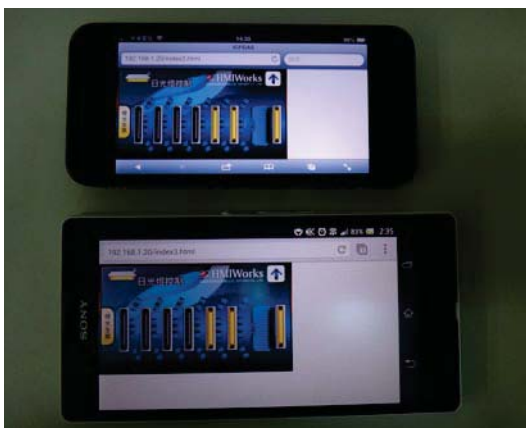
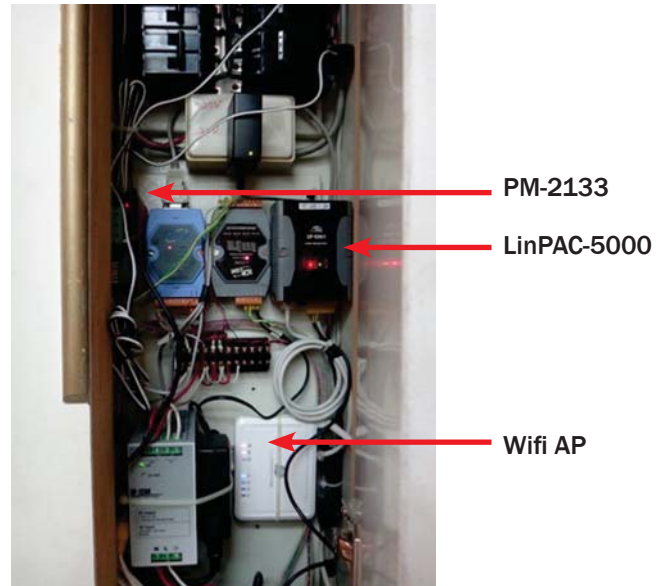
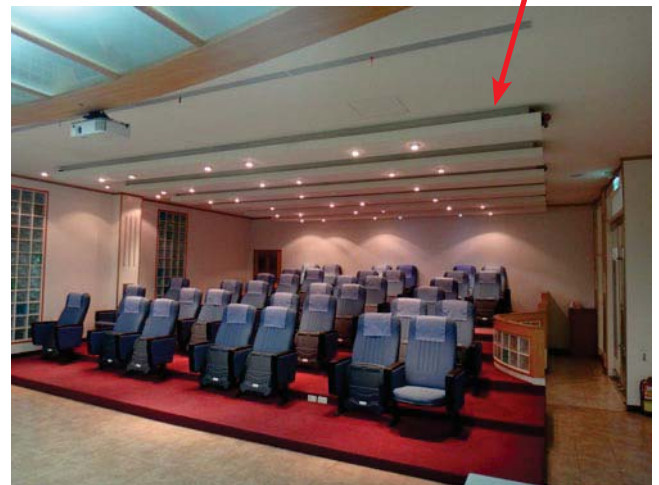
- ◆ provides a web interface for mobile devices or PC access
- ◆ implements logic control (e.g. situational mode, automatic temperature control)

provides shared memory so that programs can communicate among each other; also makes adding different protocols or expanding application support easier



The HMI section online takes into account the cross-platform component by using HTML and Ajax. While Java and Flash, too, compete for dominance in the cross-platform world, there are plenty of examples where using Flash is impractical (iOS being the prime example). A more comprehensive cross-platform solution is reached with the combination of HTML and Ajax, meaning less work pushed into the porting and more in the actual application.

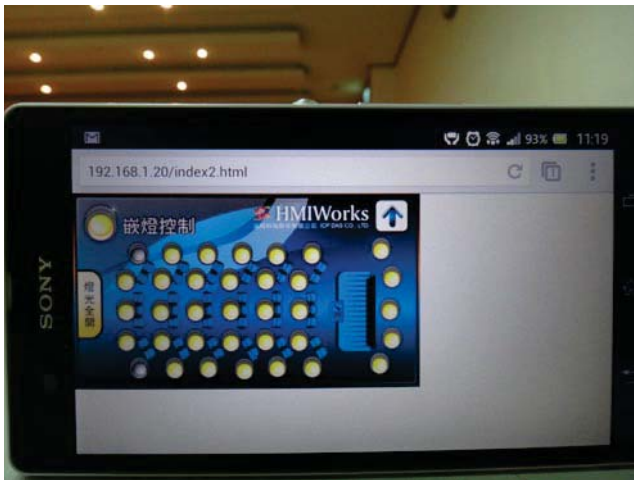
## Application field



Screen of the TouchPad



The phone's screen



## Afterword

In the post-PC era, mobile phones, tablets, and other devices have crept up to become the general computing machines of the generation. They have started to bridge the disconnect between home automation and personal computing; but to continue this, manufacturers must continue to provide support for mobile devices - a new topic itself in the post-PC age.

## Related Products

### LinPAC-5000

[http://www.icpdas.com/root/product/solutions/pac/linpac/linpac-5000\\_introduction.html](http://www.icpdas.com/root/product/solutions/pac/linpac/linpac-5000_introduction.html)

### TPD-430

[http://www.icpdas.com/root/product/solutions/hmi\\_touch\\_monitor/touchpad/touchpad\\_introduction.html](http://www.icpdas.com/root/product/solutions/hmi_touch_monitor/touchpad/touchpad_introduction.html)

### I-7018Z

[http://www.icpdas.com/products/Remote\\_IO/i-7000/i-7018z.htm](http://www.icpdas.com/products/Remote_IO/i-7000/i-7018z.htm)

### I-7065

[http://www.icpdas.com/products/Remote\\_IO/i-7000/i-7065d.htm](http://www.icpdas.com/products/Remote_IO/i-7000/i-7065d.htm)

### DL-100

[http://www.icpdas.com/root/product/solutions/remote\\_io/rs-485/dl\\_series/dl-100t485.html](http://www.icpdas.com/root/product/solutions/remote_io/rs-485/dl_series/dl-100t485.html)

### PM-2133

[http://www.icpdas.com/root/product/solutions/intelligence\\_power\\_meter/pm\\_series/pm-213x.html](http://www.icpdas.com/root/product/solutions/intelligence_power_meter/pm_series/pm-213x.html)