

Don Lancaster's

RESOURCE BIN

number seventy six

New opportunities in home automation.

Our usual reminder here that the *Resource Bin* is now a two-way column. You can get tech help, consultant referrals and off-the-wall networking on nearly any electronic, *tinaja* questing, personal publishing, money machine, or computer topic by calling me at (520) 428-4073 weekdays 8-5 Mountain Standard Time.

I'm now in the process of setting up my new *Guru's Lair* web site you will find at (where else?) www.tinaja.com This is the place you'll go for instant tech answers. Among the many files in our library, you will find complete reprint sets for all of the *Resource Bin* and other columns. Plus a brand new **Research InfoPack Service**.

You will get the best results if you have both *Netscape Communicator* and *Acrobat Reader 3.0* installed.

Home Automation

At one time, "home automation" meant being able to control a light from more than one switch. These days, the concept has exploded into everything from conventional power control to home theater to security alarms to voice recognition devices to portable remotes to networking your toaster with your hot tub to disabled aides to home energy audits.

We first looked at some HA basics way back in [RESBN41.PDF](#), and saw related alarm and security resources in [RESBN42.PDF](#). A lot has happened since then, so a fresh update would seem appropriate.

Here's a summary of today's major league players...

Home Automator

Jeff Anderson's *Home Automator* is a good labor-of-love magazine and can often be your best starting point. This pub has recently gotten improved and reformatted. Typical coverage might include temperature tracking, internet resources, X-10 module reviews, and

occupancy "people detectors"..

Website is www.HomeAutomator.com This does give you lots of listings for suppliers, hardware, software, FAQ's, users, and newsgroups.

Circuit Cellar

For working circuits of embedded controller hardware and controlling software, Steve Ciarcia's *Circuit Cellar* magazine is hard to beat. While the PIC is fast becoming the HA controller of choice, a wide range of designs can be found here. Steve also runs his *Micromint* for ready-to-run hardware, software, and kits.

His website is www.circuitcellar.com. Additional PIC info can be found at www.tinaja.com/picwb01.html

Other Magazines

There are bunches of other useful magazines. Such as...

Audio Video Interiors A competitor to *Home Theater*, they call themselves the home theater authority. \$23.95

Electronic House– Useful controls for smart homes, from economical up to extravagant. Has stories on residential lighting. Subs are \$23.95 per year.

HA Pro– Industrial trade journal calls themselves the essential magazine for home automation professionals.

NEXT MONTH: Don looks at offshore electronics & foreign semiconductors.

Home Automation– An older monthly newsletter with a strong focus on both environmental and on new assistive technology products.

Home Automation News– Member newsletter from the *Home Automation Association*. Also has a Products and Services directory.

Home Power– By Richard and Karen Perez. Lots of real world stuff here on energy efficiency, off grid living, and alternate lifestyles.

Home Theater– Monthly newsstand magazine on big screen video, high quality surround sound, and similar goodies. \$3.95 per copy.

Intelligence Report– Pricy newsletter about HA technology development, business stats, and key players. \$299

Interactive Home– Another expensive newsletter on HA internet apps, DVD, marketing intelligence, WebTv, etc. \$495 per year.

KingAlarm Review– This pub is a free newsletter from the leading security and alarm firm.

Popular Home Automation– Home improvement projects, whole house wiring, telecomm, and security. \$29.95 for a year's subscription.

Security Dealer– Trade journal largely edited for the retail alarm installer and distributor.

Security Sales– Trade journal reports on developments and tech aspects of the alarm manufacturing industry. Free to qualified subscribers.

Books

There's not a whole lot of books on home automation, and some of them are showing their age. Here is my choice for a good current selection...

American Electrician's Handbook
Approaching Home Automation
Automated Home Control
Automation Tips & Tricks I II
Building Interiors, Plants & Automation

CE Bus User's Guide
Complete Guide to Home Automation
Ergonomic Living: How to create a User Friendly Home
The Household Web

Leviton Decora Home Control Manual
Smart House Wiring
Understanding & Installing Home Systems
Understanding & Reducing your Electric Bill
X-10 Applications Manual
X-10 Automated Home Control
X-10 Creative Ideas
X-10 Hackers Secrets
X-10 Installer's Guide
X-10 Powerhouse Applications Manual
X-10 Technology Guide

Additional info on many of these titles can be picked through use of my <http://www.tinaja.com/amlink01.html>

Online Resources

An outstanding starting point is the HA "links to links" site you'll find at infinet.com:80/~dhoehnen/ha/list.html

That *HTI News* is an online ezine from *Home Toys*. You find this one at www.hometoys.com They have a new shareware library, link library, tips and tricks, plus review archives.

Electronic House Online is the ezine side of *Electronic House* magazine. Recent issue topics included whole house audio, pollution management, and surge suppression. *Automation University* has a network for dealers, owners, and builders interested in HA services at set-net.com

A Mac control site is www.shed.com

For any of you that came in late, the X-10 is an older one-way powerline control system. It has lots of low cost appliance, lamp, motor, and security modules. The big advantage is that you simply plug stuff in. Or swap out ordinary switches. X-10 is also older, rather slow, has no confirmation, and is of limited reliability.

User support for the X-10 appears at electronichouse.com/pc.B.x10.3.html, while the actual X-10 page is found at www.x10.com/homepage.htm

Some useful tech reprints appear at www.acces.com/home.htm. The *Home Team* has a fine Internet HA directory and the resource guide up for you at www.hometeam.com/index2.html Included are scads of links to home networks, general tutorials, control standards, lighting and appliances, plumbing controls, and more.

Needless to say, all those "usual suspects" of *Hotbot*, *Inference*, *Deja News*, and *Alta Vista* can quickly find you just about everything online. Use all those convenient button links at www.tinaja.com/webwb01.html

The main newsgroups include...

alt.home.automation
comp.home
comp.home.automation
alt.energy.homepower
alt.home.thater.announce
alt.home.theater.marketplace
alt.home.theater.misc

A well done FAQ, X-10 data bases, sourcecode, components, plus lots of other home automation stuff is found at web.cs.ualberta.ca/~wade/HyperHome

Manufacturers

A sampler of several of the more important home automation product manufacturers might include...

Activehome
 Advanced Control Technologies
 AMP Building Systems
 CSA Audio
 Custom Solutions
 Dancraft
 Enviromatics
 Hause
 Home Automated Living
 Home Automation
 iButton
 IBM Home Director
 IntelliSystems
 Integrated Homes
 Interactive Technologies
 JDS Technologies
 Leviton
 Lucent
 Magic Castle
 Marrick
 MoTron
 Phast
 Powerline Control Systems
 Residential Control Systems
 Sentinel Systems
 Silent Master
 Stanley
 Unity Systems
 Wadsworth Electronics
 Windland Electronics

Distributors

Most home automation products are resold through national or local distributors. Three of the high profile nationals include *Home Controls Inc*, *Bass Electronics*, and *Home Automation Systems*. All do offer glossy catalogs and extensive web sites.

Use these for wish books.

A friendly and very knowledgeable distributor is *Worthington*, while that *Advanced Services* is a mom and pop store who seem to have the finest reputation in the industry.

Some other distributors include...

new from DON LANCASTER

ACTIVE FILTER COOKBOOK

The sixteenth (!) printing of Don's bible on analog op-amp lowpass, bandpass, and highpass active filters. De-mystified instant designs. **\$28.50**

CMOS AND TTL COOKBOOKS

Millions of copies in print worldwide. **THE** two books for digital integrated circuit fundamentals. About as hands-on as you can get. **\$28.50** each.

RESEARCH INFOPACKS

Don's instant cash-and-carry flat rate consulting service. Ask any reasonable technical question for a detailed analysis and complete report. See www.tinaja.com/info01 for specifics. **\$75.00**

INCREDIBLE SECRET MONEY MACHINE II

Updated 2nd edition of Don's classic on setting up your own technical or craft venture. **\$18.50**

LANCASTER CLASSICS LIBRARY

Don's best early stuff at a bargain price. Includes the CMOS Cookbook, The TTL Cookbook, Active Filter Cookbook, PostScript video, Case Against Patents, Incredible Secret Money Machine II, and Hardware Hacker II reprints. **\$119.50**

LOTS OF OTHER GOODIES

Tech Musings V or VI	\$24.50
Ask the Guru I or II or III	\$24.50
Hardware Hacker II, III or IV	\$24.50
Micro Cookbook I	\$19.50
PostScript Beginner Stuff	\$29.50
PostScript Show and Tell	\$29.50
Intro to PostScript Video	\$29.50
PostScript Reference II	\$34.50
PostScript Tutorial/Cookbook	\$22.50
PostScript by Example	\$32.50
Understanding PS Programming	\$29.50
PostScript: A Visual Approach	\$22.50
PostScript Program Design	\$24.50
Thinking in PostScript	\$22.50
LaserWriter Reference	\$19.50
Type 1 Font Format	\$16.50
Acrobat Reference	\$24.50
Whole works (all PostScript)	\$380.00
Technical Insider Secrets	FREE

BOOK-ON-DEMAND PUB KIT

Ongoing details on Book-on-demand publishing, a new method of producing books only when and as ordered. Reprints, sources, samples. **\$39.50**

THE CASE AGAINST PATENTS

For most individuals, patents are virtually certain to result in a net loss of sanity, energy, time, and money. This reprint set shows you Don's tested and proven real-world alternatives. **28.50**

BLATANT OPPORTUNIST I

The reprints from all Don's Midnight Engineering columns. Includes a broad range of real world, proven coverage on small scale technical startup ventures. Stuff you can use right now. **\$24.50**

RESOURCE BIN I

A complete collection of all Don's Nuts & Volts columns to date, including a new index and his master names and numbers list. **\$24.50**

FREE SAMPLES

Check Don's Guru's Lair at <http://www.tinaja.com> for interactive catalogs and online samples of Don's unique products. Searchable reprints and reference resources, too. Tech help, hot links to cool sites, consultants. email: don@tinaja.com

FREE US VOICE HELPLINE VISA/MC

SYNERGETICS
 Box 809-NV
 Thatcher, AZ 85552
 (520) 428-4073

FREE Catalog: <http://www.tinaja.com>

SOME HOME AUTOMATION RESOURCES

Activehome 15200 52nd Ave S Seattle WA 98188 (206) 241-3283	EES Home Automation 102 Duchess Ct Jamestown NC 27282 (336) 882-2886	Home Automation Sys 151 Kalmus Dr Ste L4 Costa Mesa CA 92626 (800) 949-6255	Interactive Tech 2266 N 2nd St N St Paul MN 55109 (612) 777-2690	Richardson Electronics 13105 NorthWest Fwy #1090 Houston TX 77040 (713) 996-3800
Advanced Control Tech 8076 Woodland Dr Indianapolis IN 46278 (317) 337-0100	Electronic House PO Box 340 Wayland MA 01778 (508) 358-3400	Home Automator 2258 Sandy Lane Mebane NC 27302 (910) 578-9519	JDS Technologies 16750 W Bernardo Drive San Diego CA 92127 (800) 983-5537	Security Dealer 210 Crossways Park Dr Woodbury NY 11797 (516) 845-2700
Advanced Services PO Box 3871 Plymouth MA 02361 (508) 747-9598	Environmatics 603 Georgetown Rd Wenimah NJ 08090 (609) 468-7364	Home Controls 7626 Miramar Rd #3300 San Diego CA 92126 (619) 693-8887	Leviton 59-25 Little Neck Pkwy Little Neck NY 11362 (800) 824-3005	Security Sales 2512 Artesia Blvd Redondo Beach CA 90278 (310) 376-8788
AMP Building Systmes 3655 Ruffin Rd San Diego CA 92123 (800) 321-2343	HAPro PO Box 340 Wayland MA 01778 (508) 358-3400	Home Power PO Box 520 Ashland OR 97520 (800) 707-6585	KingAlarm Review 1840 Ball Rd Anaheim CA 92805 (714) 991-5543	Sentinel Systems 716 Blue Crab Rd #A Newport News VA 23606 (800) 822-2774
Audio Video Interiors 774 S Placentia Ave Placentia CA 92670 (714) 572-2255	SE Hause 7130 Grammar Rd Fariview TN 37062 (615) 799-8459	Home Theater 29160 Heathercliff #200 Malibu CA 90265 (310) 589-3100	Lucent Technologies 14528 S Outer Forty #220 Chesterfield MO 63017 (800) 344-0223 x 6027	Stanley HomeLink 125 E Maple St Troy MI 48083 (800) 355-3515
Bass Home Automation 80 Bentwood Rd W Hartford CT 06107 (860) 561-9542	Home Automated Living 14311 Old Columbia Pike Burtonsville MD 20866 (800) 935-5313	iButton 4401 S Beltwood Pkwy Dallas TX 75244 (972) 371-6824	Magic Castle PO Box 200454 Austin TX 78720 (512) 928-3062	Synergetics Box 809 Thatcher AZ 85552 (520) 428-4073
Circuit Cellar Ink 4 Park St #20 Vernon CT 06066 (203) 875-2751	Home Automation 2709 Ridgelake Drive Matairie LA 70002 (504) 833-7256	Integrated Homes 915 Cole St #331 San Francisco CA 94117 (415) 559-0554	MoTron 310 Garfield St #4 Eugene OR 97402 (800) 338-9038	Unity Systems 2606 Spring St Redwood City CA 94063 (650) 369-3233
Custom Solutions PO Box 034206 Indialantic FL 32903 (407) 726-8864	Home Automation, Inc 5725 Powell St Ste A New Orleans LA 70123 (504) 736-9810	Intelligent Report PO Box 340 Wayland MA 01778 (508) 358-3400	Phast 79 West 4500 South Bl 14 Salt Lake City UT 84107 (801) 264-8090	Wadsworth Electronics 4811 Clinton Hwy #287 Knoxville TN 37912 (800) 321-8851
Dancraft Enterprises 5520 W 118th Pl Inglewood CA 90304 (800) 860-8910	Home Automation News 1444 I Street NW Ste 700 Washington DC 20005 (202) 223-9669	IntelliSystems 6490 S McCarran #33 Reno NV 89509 (800) 637-8400	Pop Home Automation PO Box 340 Wayland MA 01778 (508) 358-3400	WatchGuard 3112 Enterprise Blvd Lake Charles LA 70601 (800) 574-1600
Digitest Services 4518 Chateau Dr Albany GA 31707 (912) 883-4047	Home Auto Specialists 10631 Bloomfield St #7 Los Alamitos CA 90720 (562) 493-4932	Interactive Home 627 Broadway Fl 2 New York NY 10012 (212) 780-6060	Powerline Control 9031 Rathburn Ave Northridge CA 91325 (818) 701-9831	Windland Electronics 1950 Excel Dr Mankato MN 56001 (507) 625-7231

*Advanced Services
EES Home Automation
Futureworks
Home Controls
Richardson Electronics
Security Store
WatchGuard*

A Challenge

As I see it, the "next big thing" in HA should be effective home energy management. Things like turning on a hot tub "just in time" can dramatically cut your monthly power bill. So can finding out your exact operating cost of an old refrigerator or whatever. Or finding the payback time to upgrade to a scroll compressor in your old air conditioning system.

What can be done here?

I've been playing with the DT500 power monitor from *Digitest Services*.

You plug an appliance or whatever into it, key in your power cost, and it accurately tracks your current, watts, and your total monthly operating costs. More in [MUSE123.PDF](#).

But what is really needed is an "electrician free" scheme to remotely sense current. A family of wireless remote devices that let you find out how much power an appliance (or your whole house) is using. In several forms. One style would be a plug-in adaptor that could go between the appliance and its 110 or 220 outlet. A second would be a clamp on beastie useful for monitoring the current in a wire. Used in bunches, this one sure could double as monitors to find maddingly intermittents in a heat pump or whatever.

A third would be a tennis ball shaped *isopod* that you would simply (but carefully!) glomp onto your

incoming power wires right at the entry weatherhead.

Your host computer might then interrogate all of the current monitors as needed to perform an entire home energy audit. Or else treat problem loads one on one.

Only the current would have to be reported remotely. Power could be determined by measuring the voltage and its phase at the audit computer itself. The isopods could either auto report every now and then, or else speak when spoken to.

Four obvious sources for bits and pieces on isopod parts are *Micron*, *Dallas*, *Amecon*, and *Maxim*. More on isopods themselves in [HACK47.PDF](#), [EMERGOP3.PDF](#), [RESBN46.PDF](#) and in [HACK65.PDF](#).

Isopod consulting services are available per the details you will find at <http://www.tinaja.com/info01.html>

This Month's Contest

Once again, I have a hollow feeling that I may have missed out on one or two of the biggies here. So, for our first contest this month, just tell me about any home automation resource I don't already know about. Or else tell me how you would build up a wireless current sensor or what you would do with it.

Lots of new opportunities here.

There should be a largish pile of my new *Incredible Secret Money Machine II* books going to the dozen or so better entries, plus an all-expense-paid (FOB Thatcher, AZ) *tinaja quest* for two that

will go to the very best of all.

Send all your *written* entries to me here at *Synergetics*, rather than to *Nuts & Volts* editorial.

Let's hear from you.

For More Help

Additional hot linked HA content is found in www.tinaja.com/resbn01.html, while HA book access links are found at www.tinaja.com/amlink01.html The HA magazine sources can be reached through www.tinaja.com/webwb01.html. Customized and personal consulting services for HA or nearly any other technical topic are reachable by way of www.tinaja.com/info01.html ♦

Microcomputer pioneer and guru Don Lancaster is the author of 35 books and countless tech articles. Don maintains his no-charge US tech helpline found at (520) 428-4073, besides offering all of his own books, reprints, and consulting services. Don also offers a free catalog full of his unique products and resource secrets. The best calling times are 8-5 on weekdays, Mountain Standard Time.

Don is the webmaster of his Guru's Lair found at <http://www.tinaja.com>

Full reprints and preprints of all Don's columns and ongoing tech support appear here. You can reach Don at Synergetics, Box 809, Thatcher, AZ 85552. Or send any messages to don@tinaja.com

PLEASE CLICK HERE TO...



Get a Synergetics catalog



Start your tech venture



Sponsor a display banner



Find research solutions



Send Don Lancaster email



Pick up surplus bargains



Find out what a tinaja is



View recommended books