



RTC-TH May 2014 Update

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Community-based environmental education for the self-sufficiency and sustainability of small rural family farms

ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนชนบทขนาดเล็กครอบครัวฟาร์ม

You may post questions / comments to the Discussion area of our website

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Living in an Inverted World

Did you ever notice how some things in life seem upside down, backwards, or inverted? When we lived in Los Angeles, we were in a suburban area far from the rundown urban core. We co-founded Earth Systems Science, Inc. to use community-based education to help empower urban youth to develop a sense of community, learn basic gardening, and reconnect them to nature through the National Wildlife Federation's Backyard Wildlife Habitat program. The long range goal was to help people create and maintain sustainable urban neighborhoods.

One noticeable "inversion" was the property taxes in our suburban neighborhood were noticeably higher than in the rundown urban neighborhoods. We spent money to maintain and improve our property and we got a higher property tax bill. However, "slumlords" let their properties fall into disrepair and paid less property tax. They paid less and got more in terms of police, fire, and other emergency services out of proportion to the city tax revenues. We paid more and got less.



Photo from the internet: educational fair use clause

Rundown urban neighborhoods cost more in taxes




Photo from the internet: educational fair use clause

Deforestation in the Chiang Mai area of Thailand

It seemed to be a redistribution of wealth based on a system of punishing the responsible and rewarding the irresponsible. This was counter to what I was taught as a child. But that was the system and status quo. The money had to come from somewhere. It seemed an ironic abuse of the Robin Hood theme of take from the rich and give to the poor.

Protecting the environment seems to be following this abusive model. In Thailand, deforestation resulted in local

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and regional disasters (e.g. soil erosion, mudslides, landslides, silting of rivers and irrigation works, loss of lives and property, infrastructure damage, economic and social disruptions and the attendant costs). In response, government spending flows into the disaster area in the form of emergency relief, recovery, and perhaps additional policing and law enforcement to prevent further deforestation.

In some areas Buddhist monks have ordained trees to protect them from illegal logging. An area where people protected the forest often does not suffer the headline grabbing “natural disasters” and attendant need for relief and emergency services. Often, the area may not get any special government attention or funding to keep up the good work. They are not being punished, but the fact remains that with limited budgets, funds go to the trouble spots.



Some monks in “ordain” trees to protect them



We are inspired by the work of Andy Lipkis, founder of www.treepeople.org. Andy managed to put a dollar value to planting a tree. In the greater LA area, he showed planting trees helped reduce electric utility costs (among other city costs), added value to real estate, etc. He convinced the city government to use the cost savings to support further tree planting. It the urban tree planting / maintenance program sustainable by reallocating existing funds.

We thought that small rural farmers who endeavor to apply the King’s Theory and sustainable agricultural practices (SAP) should be “rewarded” for being good environmental stewards. They are NOT part of the problem. They are part of the solution to global climate change. In order to get more small rural farmers to do the same, we thought of adapting Andy’s idea for small farmers. We call it “Funding Farmers for Climate Change Mitigation” (F2C²M). You can read our discussion paper at www.neighborhoodlink.com/RTC-TH_Tech. (This is our lesson archive site). Take action to be part of the solution. 🌍



Protected forest above our farm

Garden & Farm Fruits

One of the wonderful things about living here is having a variety of fresh fruit just about year round. These are some of the fruits in the yard and garden in the village. They appeared in early to mid-April and will be ready by the end of April and into May.

On the farm, several mango trees are loaded with fruit. They are bagged to protect them from fruit flies.



Bananas in the side yard



Rose apples near the SW corner of the carport



Mangos near the driveway



Red pomagranete



White pomagranete



Lime



Jack fruit



Bagged mangos along the farm driveway



Pineapples along the farm driveway near the gate



Mangos, papayas, and egg plants along the driveway



Bai Ya Nang fruit forming on the trunk

Water in Our Fishponds



The water is estimated to be less than 1.5m but more than 1 m.

The Central Fishpond

Our largest pond is fed by ground seepage from the Central Gully (the largest gully on our farm). Water depth is estimated between 1.5-2 m. This was the first pond on the farm and has never gone dry.



The East Fishpond

This was the third pond on our farm. The water level is just over 0.6m. Ground seep comes from the East Gully bordering our farm. The actual surface flow is diverted to other land. We don't get direct flow from this gully.



The dry season is not over. We seem to be doing all right with our water supply. Most of the farm gardens are use water from a shallow well between the rice paddies and the fishponds. So far thundershowers have brought about 34 mm of rain in Ban Na Fa (about 1.2 km from the farm). So there was some rainwater input to our farm storage tanks.

The SW monsoon rains have yet to come. They usually begin sometime in May. It will be interesting to see how our new weather station handles the monsoon rains. 🌐

Assorted Farm Scenes



Our dry upper terrace fire recovery: The bamboo recovered nicely; the teak will do better in the wet season.



The refurbished overhead trellis next to the wet rice paddies.



Long'an starting to form in the orchards



Mulched egg plants along the driveway thriving



Pineapple struggling in the heat

Overall, the farm seems to be doing fairly well through the heat and drought. So far this year, there's been less than 40 mm of rain in our area. Mulching seems to have served our egg plant and chili gardens well. We need to extend the effort to the pineapple plants along the driveway entrance gate. We sure hope the monsoon rains come soon to give them a good soaking. That should help assure we get some fruit to pick. 🌍

Introducing the “Eye-pad / Go Pad”

There’s a whole growing group that could be known as the “I”-generation. They have “iPods”, iPhones”, “iPad”, “iThese” and “iThats”. These personal electronic devices (PEDs) seem to be everywhere. In an integrated spirit of rebellion and the spirit of no tech / low tech, the RTC-TH introduces the brand new “Eye pad / Go Pad”. This is our appropriate technology answer for rural emergency communications.

It requires no batteries so it can be operated when there is no electricity (a common condition in many disasters). It is shock proof, drop proof, and relatively crush resistant. Under certain circumstances it is wind resistant and fairly unaffected by dust and grit. (It is, however, potentially vulnerable to fire.) Everyone should have this Paper Personal Devices (PPD).



The pocket-sized RTC-TH “Eye” Pad / Go Pad

To be consistent with our emergency preparedness program, we recommend keeping spare parts on hand. This way you have a ready supply of “Eye-pad / Go Pads” when any emergency situation arises.



In theory, it could be used this way.

The “off-the-shelf” components have many years of proven effectiveness and worth. Ask anyone familiar with pencil or pen and paper. They can attest to the capability of any working pencil or pen to write in an unlimited number of languages on paper. The “Eye-pad” / Go Pad should be in everyone’s emergency kit and Go Bag! Be the first on your block to make / use your very own “Eye-pad / Go Pad”! 🌐



PEDs seem to be everywhere.

This is an ideal device for remote rural areas. It can be made using readily available off the shelf parts. The user interface is very intuitive. It comes with no instructions, user guide, or warranty. The RTC-TH “Eye-pad / Go Pad” is multi-lingual. There are no modifications, no subscription fees, updates, or options to purchase. If your original unit becomes inoperable for any reason, you can quickly make a replacement.

To be consistent with our emergency preparedness program, we recommend keeping spare parts on hand. This way you have a ready supply of “Eye-pad / Go Pads” when any emergency situation arises.



Overwhelming empirical evidence favors this use.

Cloud Critters Overhead

In an effort to not take ourselves too seriously, we turn our eyes upward for relaxation and rekindling our imaginations. It is easy to become too immersed in problems both large and small. On a couple of days when we indulged ourselves in a break from work, we spotted these curious cloud formations. We were delighted to let our imagination run free to see these friendly cloud critters. 🌐










Baby elephant and teddy bear napping on a cloud.



A Big Bear cloud over Doi Phu Kha.

Buddha: Days of the Week Poses

Sun		Paang Tawai Netr Sunday, standing upright, with arms crossed over his abdomen, with the back of his hands facing out. The eyes are wide open. This pose symbolizes mental strength.	Depictions of Buddha's life are icons for significant events in his life to remind people of his life's story. They also serve to reinforce parables of his teachings in past times of low literacy. They are examples that "pictures are worth a thousand words". 🌐		
Mon		Paang Harm samoot Monday's Buddha has his right hand raised in the pose of Preventing Calamities of Preventing Relatives from Fighting.	Thu		Paang Nung Smadhi Thursday is the Buddha in meditation. The Buddha sits in the lotus pose with his hands resting in his lap, with palms facing upwards.
Tue		Paang Saiyasna Tuesday, the Buddha lies on his right side, with his right hand tucked under his head, and the left hand lying along the left side of his body.	Fri		Paang Rum Peung Friday the Buddha is standing in contemplation. Both of his arms cross the chest, with the backs of his hands facing outward.
Wed		Paang Oombaot Wednesday, before noon, Buddha is posing with both of his hands carrying an alms bowl in front of his chest. Wednesday, after noon, Buddha is with a monkey and an elephant. The animals are giving an offering to him.	Sat		Paang Naga Prok Saturday the Buddha is seated under a Naga, which is a seven headed serpent), meditating. In this position he is being protected from falling rain by the Naga.
Images for this summary table are from the Internet: Educational fair use clause.					

New RTC-TH EmComm VHF Antennas

Devising the roof mounting bracket for the new weather station was also a breakthrough for our EmComm VHF antennas. A few years ago, Mark N7YLA donated a copper Hentenna for our VHF radios. This is a directional or beam antenna. (Think of it like a powerful spot light as opposed to a more general room ceiling light fixture. A beam antenna helps to narrowly aim your transmitted radio signal toward the receiving station. When receiving, it also captures more energy.)



Photo courtesy of
Mark, N7YLA

Mark N7YLA with the copper 2m VHF Hentenna

This is an omni directional antenna that sends out a transmitted radio signal in all directions. It is like dropping a pebble into a pond. The transmitted waves move out as a set of concentric rings in all directions.

Below the Thai Slim Jim is the Hentenna. The signal goes out from this antenna at right angles to its long direction. When the rectangle is oriented with its long dimension parallel to the ground, the antenna is vertically polarized. This means its signal can be received by other vertical 2m antennas. Vertical 2m antennas are the most commonly used antenna for 2m VHF operations in Thailand.

Preliminary trials (at ground level) showed the height of this combination was marginally stable when the rotator was activated. We tried to adjust the balance of the array. But it might not be possible to keep the array balanced under various wind conditions. So we abandoned the combination approach. We had to mount the antennas on separate masts.

The Slim Jim is mounted on a 3 m mast at the center of the carport roof. The Hentenna and rotator will be on a 1.6 m mast on the toward the East end of the Ban Na Fa station carport roof. (This work is in progress and will be reported when done.) Although height is king for antennas, we live with this compromise.



The new roof top mount for the Thai Slim Jim

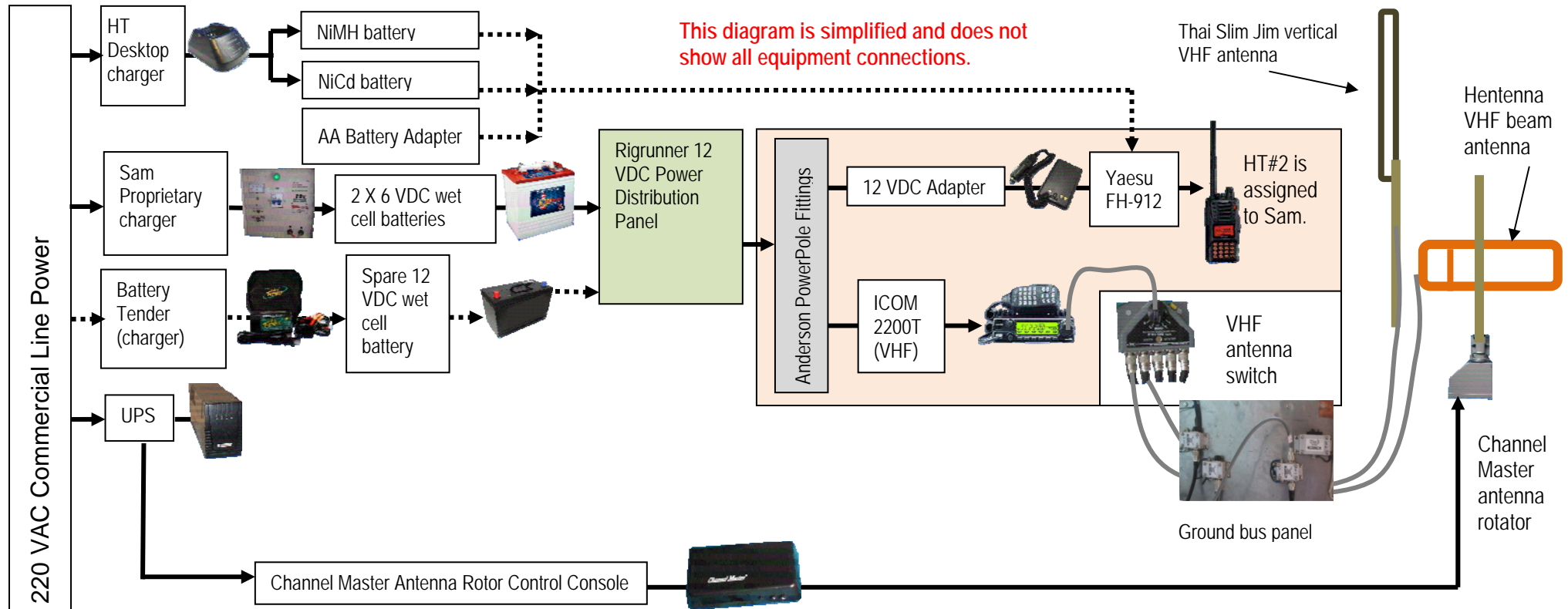
Aiming the Hentenna is done with an antenna rotator (aka rotor). In this case, we have a Channel Master unit designed for use with TV antennas. We wanted to mount two antennas on a short, strong PVC mast atop the Channel Master rotor. The Thai Slim Jim is a 2m vertical antenna.



*Thai Slim Jim, 2m
VHF vertical 144-
146 MHz antenna*

The main house blocks the beam antenna coverage to the NE. Luckily the provincial capital is to the S and the district offices are to the NW. In an emergency, these directions would be of prime importance. There is a chance the Slim Jim might be able to get a signal out to the areas not covered by the beam. It may be able to get a signal out over the steep peaked roof of the house. 🌐

RTC-TH Station #3 Ban Na Fa: VHF Radio / Antenna System Overview



RTC-TH EchoLink Vulnerability Notes

There are two major vulnerability points for our system:

- Primary: Internet outage at local, region, national, or international level. We have no control over this.
 - Secondary: Commercial power mains outage would disable the antenna rotor, and our battery recharging capability.
- Plans to improve system resilience are in the works (but like all things, take money, time, finding in country sources, etc.).

Note: At press time, the roof mast mount for the Hentenna was still in progress.

G.R.O.W. Weather Station Follow-up

An evening power outage plunged our village and vicinity into darkness. The heat and humidity of the day meant we faced the prospect of a warm sticky night without the comfort of an electric fan. No electricity also meant no hot shower. There was no power for the tankless “on demand” hot water heater/shower unit. Not a problem. The cold shower would be one way to get some comfort before bed.

The loss of power also meant our newly established weather station was knocked off the Internet. The UPS (Uninterruptible Power Supply) unit gave use time to safely shut down our computers and save our work. But there wasn't sufficient power to keep the weather station control console up and running. Also, the modem /router needed line power and the Internet connection in order to uplink our weather data. Without power, I couldn't tell if our ADSL connection was active or not.



Our WS-1000 weather station on the carport roof



Photo from the internet: educational fair use clause

More power outages may come with more storms

relief when the wireless signal strength indicator went to five bars and wifi icon lit up. Our weather station was back online. I returned to bed. My mind was filled with concerns for the lost data. The rain diminished and ended. Very little of it was recorded. We no longer had a continuous weather record. Such is life. A serious vulnerability was exposed. We need a more reliable power supply for the weather station console and modem / router if we want to keep the station operating 24 / 7.

We were surprised when checking the morning emails. The wunderground team sent two sequential messages. The first message notified us our station had not sent any data for 2 hours. The second message reported and “all's well” and they were receiving data from us again. It is good to know they pay attention to our existence. We need to stay connected. 🌐

Note: Use the link below to see another real-time display of our station data (see screenshot on the right).

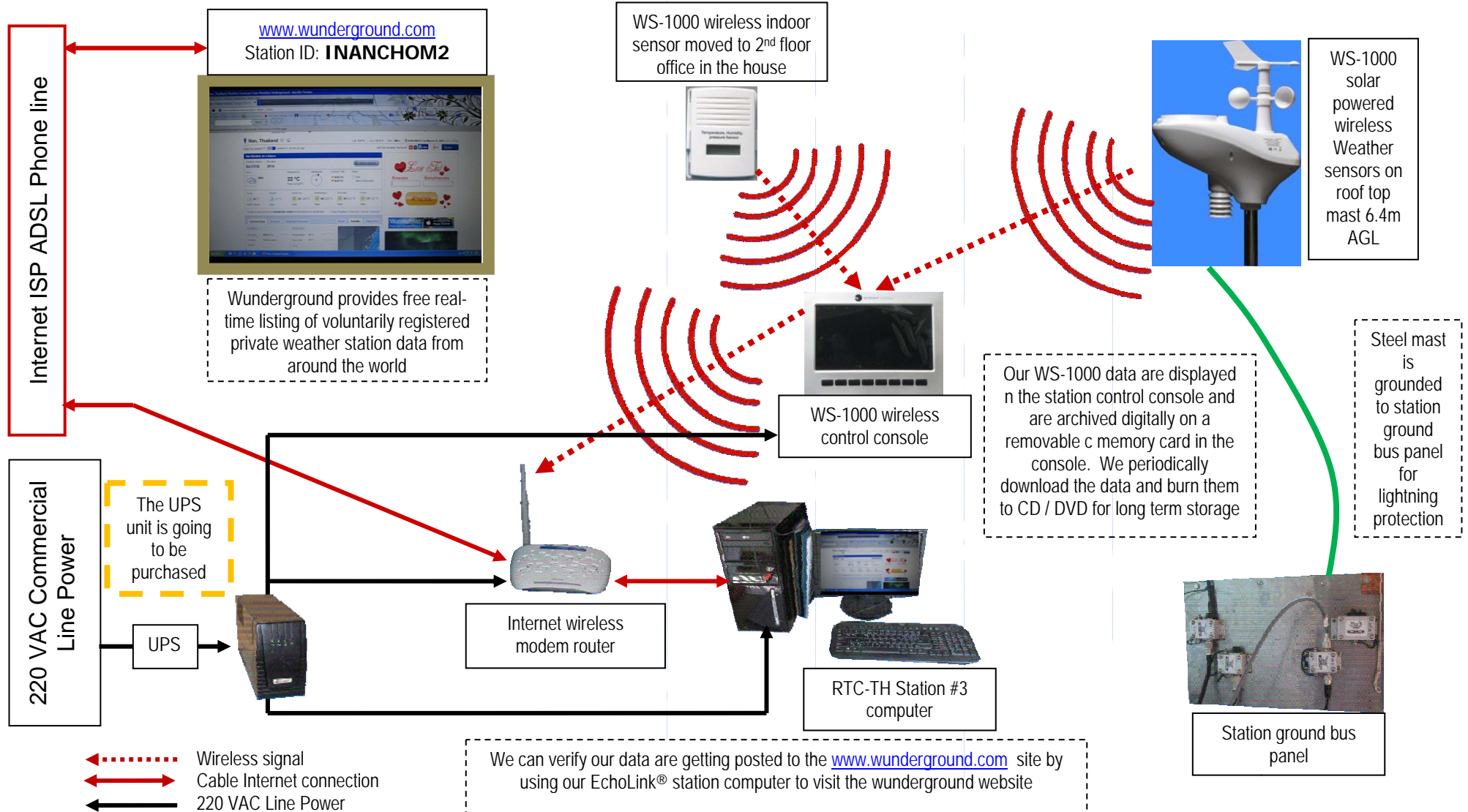
http://www.wunderground.com/swf/Rapid_Fire.swf?station=INANCHOM2

About 02:30 hrs in the morning, we awoke to the sound of heavy rain pounding on the roof and pavement. I noticed the electric in our bedroom was running. I grabbed a flashlight and went upstairs to see if the weather console and the modem/router were getting power. For some reason I had to push the reset button on the UPS and modem/router. The weather console and modem/router sprung to life. I waited anxiously. I felt



RTC-TH G.R.O.W. / M.E.W.S. Base Weather Station in Ban Na Fa, T. Chom Phra, A. Tha Wang Pha, Nan, Thailand

This weather station is co-located with our amateur radio EmComm (Emergency Communication) station #3 at Ban Nan Fa.



Porch Ponderings: The Power of Reading

It is difficult to ignore the power of reading in your education. Reading is a critical “time binding” tool enabling knowledge, ideas, experiences, and other information to be transferred through generations. Improved writing is an added bonus for those well-versed in reading.

I extend my deepest gratitude to my parents for giving me the gift of reading. Though relatively poor, they purchased *The Book of Knowledge*, an encyclopedia set (I forget the brand), and *The Great Books of the Western World*. We lived in a rural area. Both parents commuted to work. Getting to a library was not easy. So these resources at home were put to full use.



In my childhood, the reference books filled the bookshelves on the left. I read at the table.

We could get to the library at school. But if we missed the school bus ride home, it was a 6 mile walk along a narrow 2-lane paved road. The normal routine was to catch the bus home, do our chores, and choose something to read from the 3 difference reference book sets. If there was time, we might have a chance to go for a swim. But we had to be home in time to prepare things for cooking dinner and set the table.

After dinner, I recall sitting with my mother and reviewing my reading. I would open the reference book to the article or chapter I read. My mom would look it over and question me about the reading. My oral recitation developed the foundation of my abilities to recall and to summarize the reading in my own words. Little did I know at the time how these basic skills would serve me throughout my life.

Growing up on an island can limit your horizons. Reading expands those horizons beyond your line of sight. There are no limits to what you can read. Add to this the value of attending a school where nearly half the students were non-locals. Many were from military families. I got to mix with people my own age that had traveled the world. Now the oral English more closely followed the written words of the books I read. This was a stark contrast to the local pidgin English.



*Greg Lee, Mrs. Evans (debate coach), Tim Wilson
1964 Hawaii State Debate Championship Team*

A major payoff of my reading and English language skills came when I was part of the team that won the 1964 state debate championship. This was the very first year our high school participated in the competition. To say this was a major confidence builder is an understatement. This led to my first trip out of the islands and getting bitten by the travel bug.

My parents encouraged me getting an education. They budgeted and saved for me to get a college education. I got stipends and tuition waivers for graduate school. I was the first in my family to earn an MA degree. It all started with learning to love reading. Give the gift of reading to others, especially the youth; they are our future. 🌐