Rural Training Center-Thailand Emergency Communications: Technical Paper

GERC Technician License Class:
GERC -RTC-TH EchoLink® Demo

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www.neighborhoodlink.com/org/rtcth E-mail: rtc2k5@gmail.com

Ready to Serve and Sustain Our Community.

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

GERC – RTC-TH (GERC-AI) Collaboration

The Apr 23-24 2001 GERC Technician License class was another opportunity for a GERC / RTH-TH "networking rather than not working" effort. For the first time, Mark (N7YLA) wanted to include an EchoLink® demonstration with the class.

Mark (N7YLA)

Greg (HSØZHM)

As with many innovative first time evers "the best made plans of mice and men…"but in this case, things went even better than planned. The initial plan was constrained by a lack of time. There were many topics to cover in the class. Mark planned the demo for the 2nd day of the class at the mid-morning break. That put is at about mid-night in Thailand. He felt bad about asking us to work the graveyard shift. "There won't be much time, so maybe you will talk with only me or Jim while we let the class listen in," Mark suggested. He got the standard RTC-TH "NAP (not a problem), Mark."

Jim & Mark, GERC mobile radio, yagi antenna

Jim (KG6TQT)

Frank (KG6TQV)

Mark (N7YLA)

The GERC Technician License class instructional team consisted of Jim (KG6TQT), Frank (KG6TQV) and Mark (N7YLA). Jim and Mark would set up the GERC field 2m VHF radio set at 146.715 MHz and a 4-element Yagi beam antenna at the training site. They would use the field radio to remotely access the GERC EchoLink® gateway at Mark's home station (about 2 mi away). From that point on, the transmission would continue by internet to the RTC-TH EchoLink® computer ~7,970.3 mi away in Thailand.

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The RTC-TH (GERC-AI) EchoLink® HSØZHM-L Node 520300

Greg (HSØZHM), Thailand in QSO with the GERC class

It looks like any ordinary desk top computer. But with the free EchoLink® software and an amateur radio operator's license, it becomes a hybrid alternative amateur radio communication option.

By pre-arranged sked (schedule), I got my computer up and running in EchoLink® waited for Mark's call before the class to confirm the connection was working. Then I waited up until midnight for the class break when we would do the demo for students. Then came the call "HSØZHM this is N7YLA!" When I answered, Mark announced he wanted any interested students to engage in a QSO with me. Always willing to support Mark's efforts to advance amateur radio, I agreed. In about 20 minutes we completed 22 contacts. Later, Mark reported the hands-on demo was the "cat's meow" for the many students.

The GERC EchoLink® Gateway N7YLA-L Node 358124

Mark's dedicated radio/computer for EchoLink®

Mark's EchoLink® gateway consists of a dedicated 2m VHF radio / antenna system and a dedicated computer running only the free EcholLink® and related software. The program can be run in "User" mode (which connects via the internet to other EchoLink® nodes of all types). In "SysOp" mode, you can operate as a Link gateway or as a Repeater.

Mark's GERC set up is as a "SysOp" gateway. He has a dedicated 2m VHF radio interfaced to his computer. This allows him to use another radio at a different location to call his home station. Using special digital codes transmitted from the "field" radio, he can use his field radio to call me via the internet. Normally the range of a 2m VHF radio is limited to "line of sight". But with EchoLink® set up this way, Mark's radio has an increased to reach around the world! To see the significance of this, lay out the following pages in the order shown below.

The RTC-TH / GERC-AI EchoLink®	Gen 1 RTC-TH (GERC-AI) / GERC EchoLink®	Gen 2 RTC-TH (GERC-AI) / GERC EchoLink®	Gen 3 RTC-TH (GERC-AI) / GERC EchoLink®

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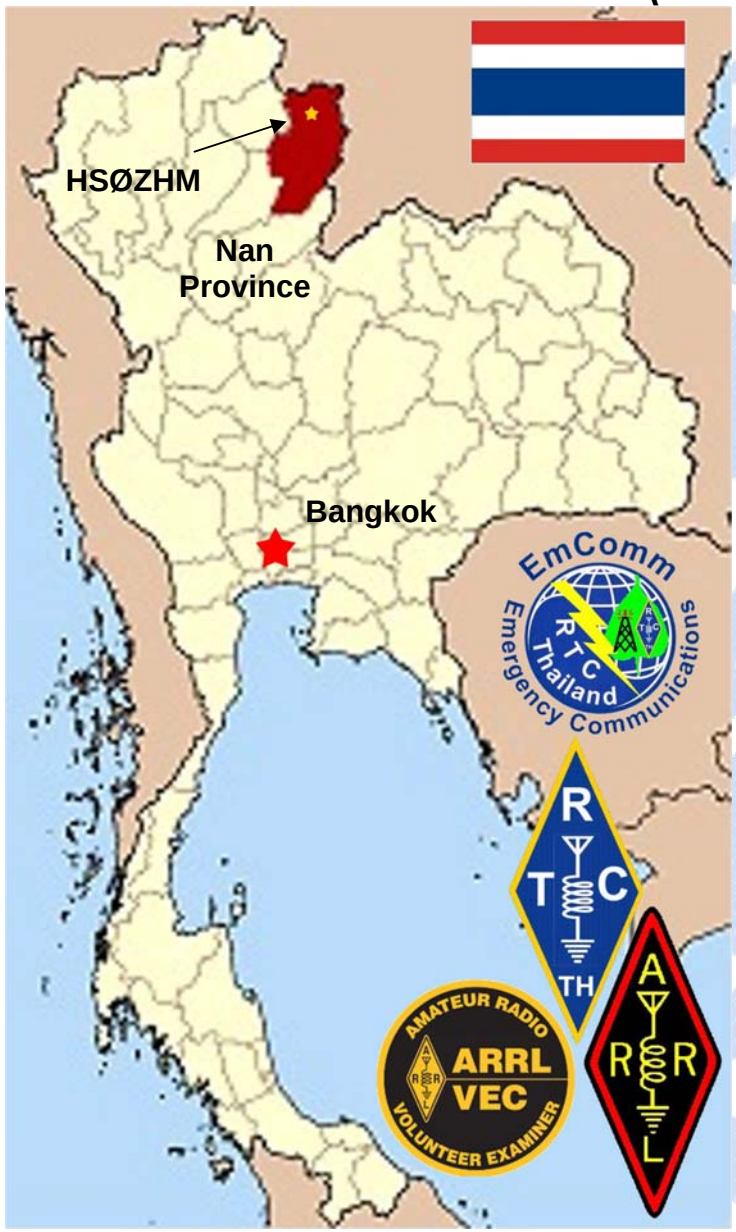
The RTC-TH (GERC-AI) EchoLink® HSØZHM-L Node 520300



Location of the RTC-TH in Thailand

Greg (HS0ZHM) at the RTC-TH dedicated EchoLink® computer running EchoLink®.

The Rural Training Center-Thailand (RTC-TH) maintains an Emergency Communications (EmComm) program as a community service activity. It collaborates with the Glendora Emergency Radio Communications (GERC) group as GERC-AI (Auxiliary International). I am still in the process of setting up my station to include VHF, HF, and EchoLink®.

I have used my EchoLink® capability on a number of occasions to support a variety of GERC's educational outreach activities. I plan to expand my EchoLink® operations to mirror those of the Mark's GERC station.

I am a staunch supporter of GERC and emergency preparedness. I am regular contributor to the GERC website.

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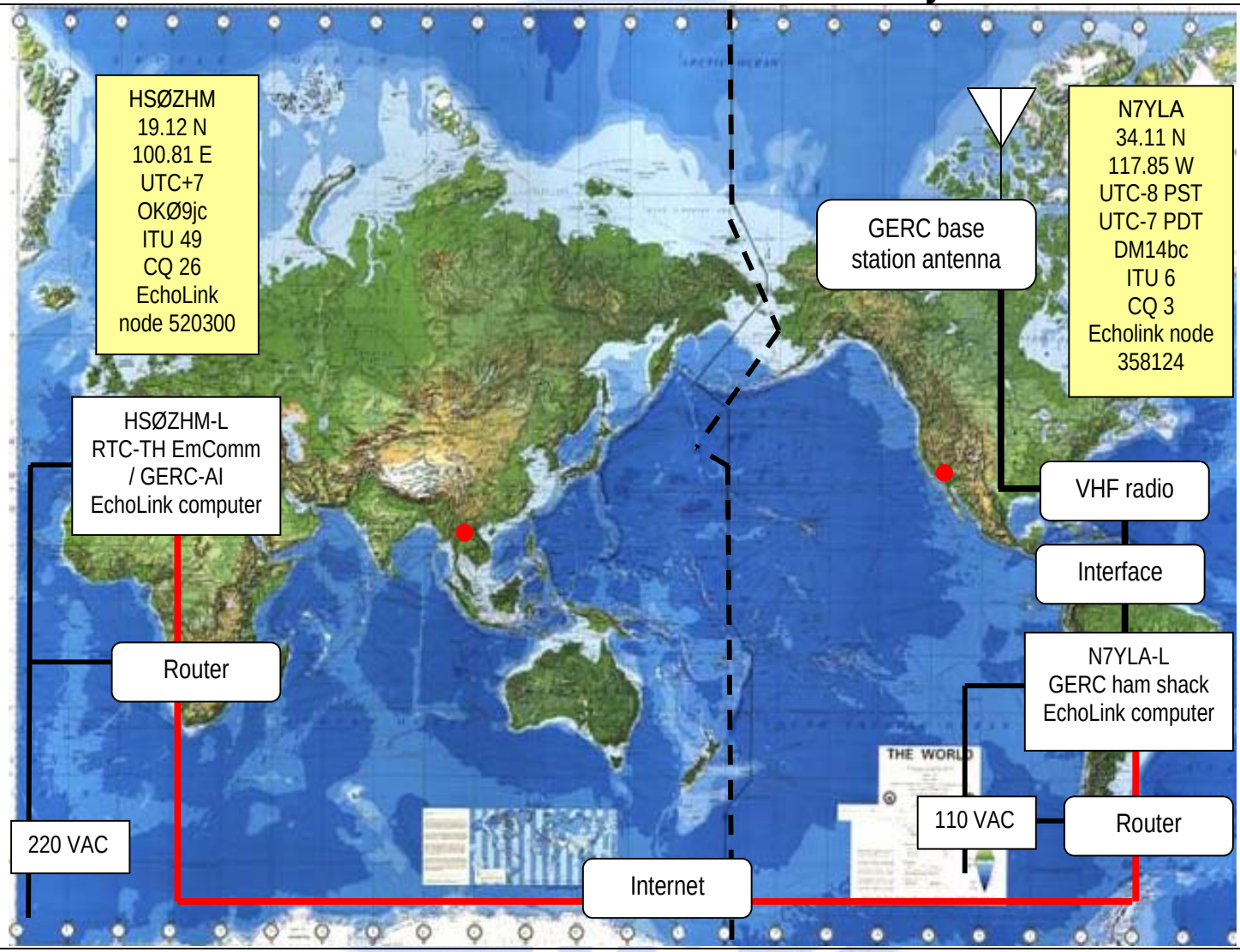
Gen 1 RTC-TH GERC-AI / GERC EchoLink® System

Rural Training Center-Thailand

GERC-AI

Ready to Serve and Sustain Our Community

Greg
HSØZHM
(KI6GIG)



Glendora Emergency Response Communications

Ham radio may not change the world, but it will change the way that you hear it.

Mark
N7YLA
(KF6DSA)

The initial EchoLink contact was computer to computer. Contact was frequently disrupted for various technical reasons in Thailand (e.g. power loss, unstable internet, computer issues, router issues)

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Gen 2 RTC-TH GERC-AI / GERC EchoLink® System

This shows the geographic relationship of the GERC base station to the mobile VHF radio at the class training site. Both radios are on the same simplex frequency. Each radio is at the extreme edges of the terrain profile (pink graph above).The line of sight distance is ~3.23 km / ~2 miles. Theoretically, "line of sight" means an unobstructed view from the top of one antenna to the other. The base station is at 233 m (above mean sea level), the training site is at ~282m (amsl) with a 342m (amsl) hill between them. Yet the signal report for the contact with HSØZHM 12,826.5 km /7,970 mi away from the GERC base station was 5-9.

GERC EchoLink® Gateway NY\7YLA-L Node 358124

In the Gen 2 diagram above, the GERC Base station connects to the right side of the Gen 1 diagram. The ability to connect to the EchoLink® system using a remotely located radio makes this system the "next generation" for the RTC-TH and GERC. Our dream is to do this in Thailand and would be Gen 3 for us.

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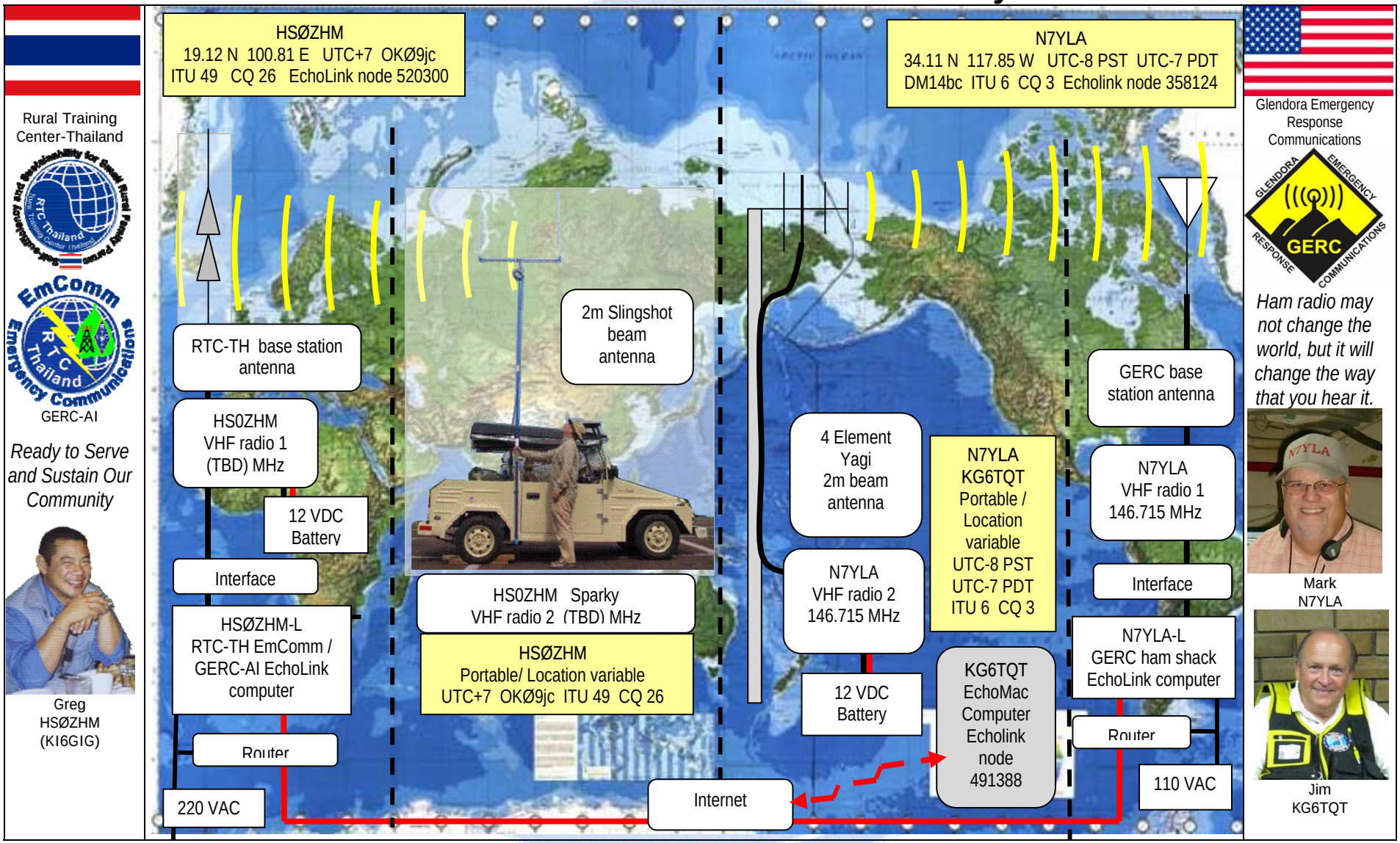
Gen 3 RTC-TH GERC-AI / GERC EchoLink® System



The long-range RTC-TH EmComm goal is to have an EchoLink® Link node similar to GERC allowing simultaneous simplex and EchoLink® contacts.

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