Rural Training Center-Thailand Emergency Communications: Technical Paper

# RTC-TH / GERC JOTA 2011

## EchoLink® Demonstration



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Ready to Serve and Sustain Our Community.

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

## *GERC JOTA 2011*

Glendora Emergency Response Communications
Jamboree On The Air 2011

*GERC hams setting up their HF station for JOTA*

*The GERC VHF station was west of the HF station*

The GERC JOTA site was the playground of the Sonrise Christian School (1220 E. Ruddock St., Covina, CA (~34.088247 N, 117.864619 W, Elev. ~191m AMSL).

The GERC JOTA HF set up consisted of two ICOM 718 multiband radios located under the parachute shade structure), a Moxon HF antenna (being set up the GERC hams on the left), and a G5RV dipole antenna (tall mast on the right).

The VHF station had the 2m VHF simple EchoLink® radio link and other VHF radios tuned to local repeaters. The EchoLink® gateway was via Mark's N7YLA-L node 358124 located ~2 miles at an azimuth of ~18° True from the GERC JOTA VHF station. The antenna is a dual band J-pole using ladderline put into some PVC so it could be mounted at the top of a mast. Power was from a 12 VDC, 28 amp hours AGM battery.

The GERC JOTA 2011 leadership team consisted of Jim (KG6TQT), Frank (KG6TQV) as the main organizers. Mark (N7YLA) provided the key logistical support. The main EchoLink® operators were Dennis (KI6NQG) for GERC and Greg (HSØZHM) for the RTC-TH EmComm program.

*Jim (KG6TQT)*

*Frank (KG6TQV)*

*Mark (N7YLA)*

*Dennis (KI6NQG)*

Greg (HSØZHM)

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

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®. Immediately I could hear the GERC JOTA special event station K6U engaged in a QSO with Jens (DL1BJR) in Bremen, Germany. From my computer screen, I could see George (KC9TIJ) was also connected to the N7YLA-L node. On his computer screen, Jens could see I just logged on and notified Dennis (KI6NQG). Dennis then set up a rotation so scouts could contact all 3 of us via EchoLink®. In emails the next day, GERC members commented how both the scouts and their parents were utterly amazed by the EchoLink® demo and felt we planted seeds for future hams among the young participants.

*Greg (HSØZHM) on EchoLink® for JOTA 2011.*

## *The GERC EchoLink® Gateway N7YLA-L Node 358124*

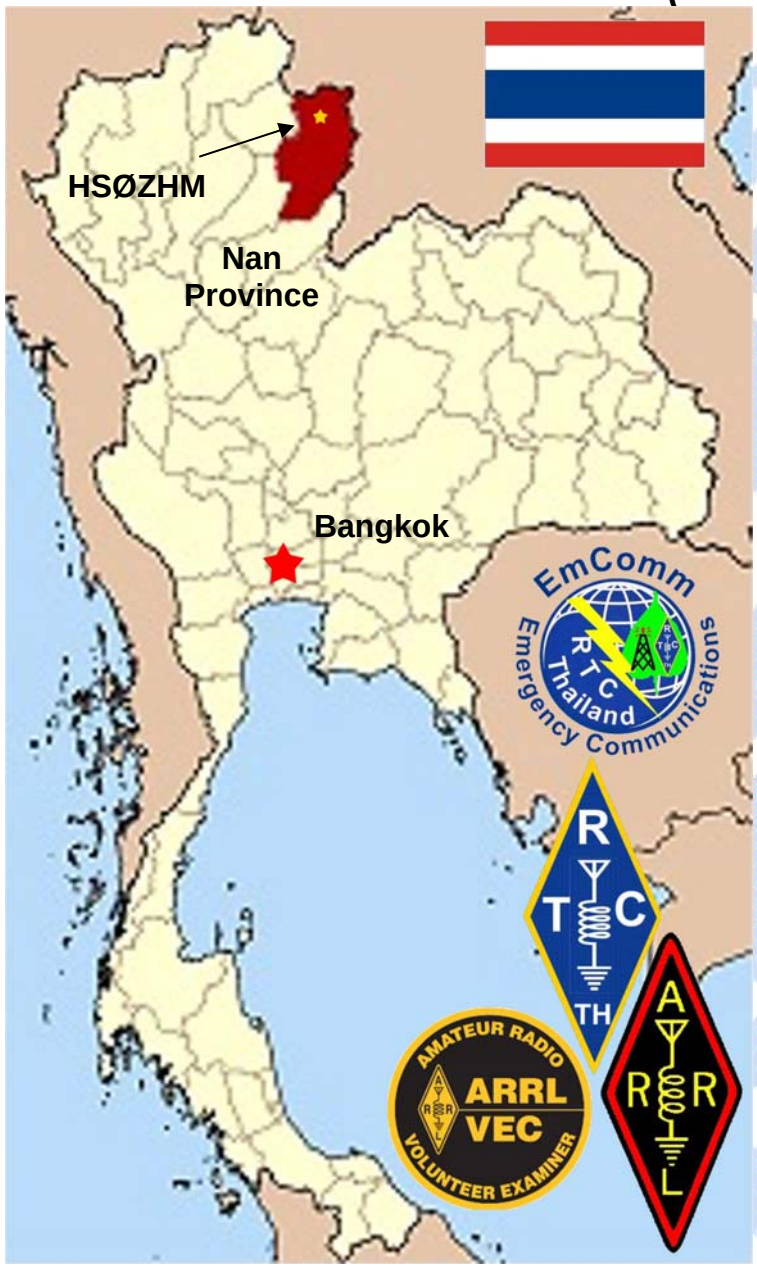
*Mark's dedicated radio/computer for EchoLink®*

Mark's EchoLink® gateway consists of a dedicated 2m VHF radio / antenna system and a dedicated computer running only the free EchoLink® 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 reach around the world! To see the significance of this, lay out the following pages in the order shown below.

| | | | | |
|---|---|---|---|---|
| RTC-TH Node 520300 | RTC-TH GERC EchoLink® | JOTA 2011 GERC EchoLink® | GERC JOTA 2011 Sonrise Site | KI6NQG field radio to N7YLA gateway |

# *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.

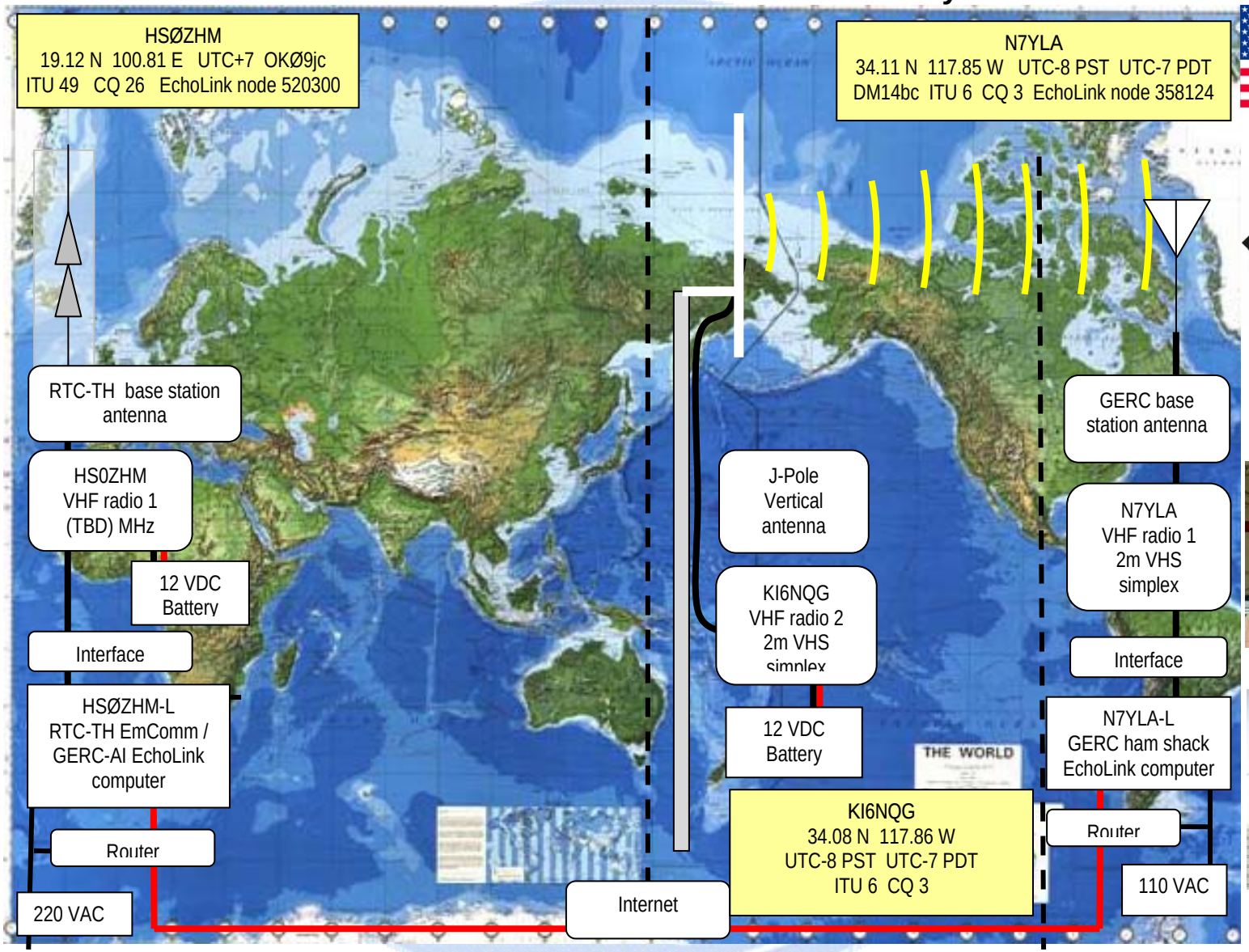
# JOTA 2011 RTC-TH GERC-AI / GERC EchoLink® System

Rural Training Center-Thailand

GERC-AI

*Ready to Serve and Sustain Our Community*

Greg
HSØZHM
(KI6GIG)




Glendora Emergency Response Communications

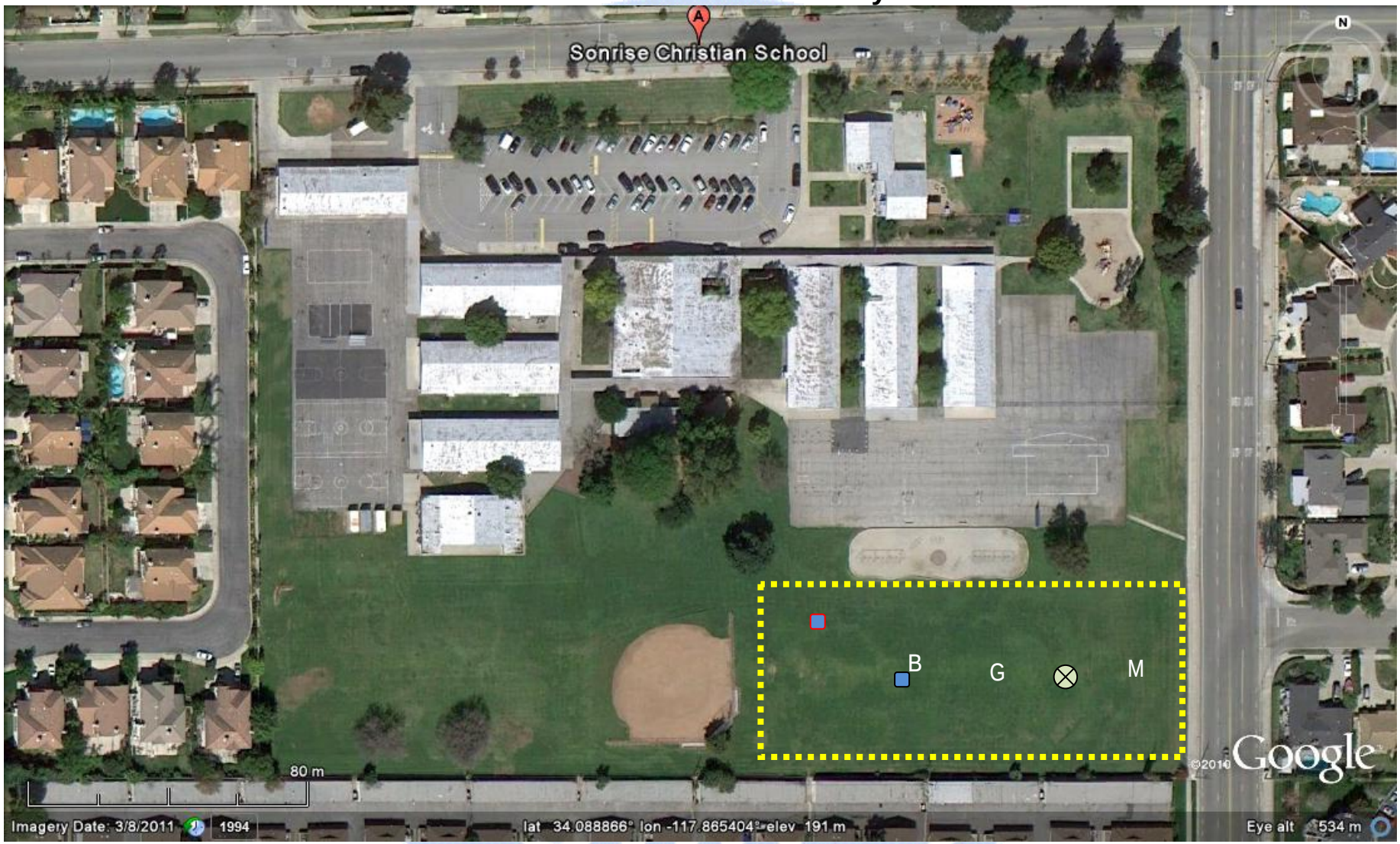
*Ham radio may not change the world, but it will change the way that you hear it.*

Mark
N7YLA

Dennis
KI6NQG

*The RTC-TH EmComm EchoLink® Link node is on a computer. The GERC JOTA field EchoLink® radio connects by simplex to the GERC EchoLink® gateway.*

# JOTA 2011 GERC EchoLink® System




*General site for the GERC JOTA 2011*

Registration | VHF Station | B VHF Antenna | G G5RV HF Dipole Antenna | Parachute Shade Structure HF Station | M = Moxon HF Antenna

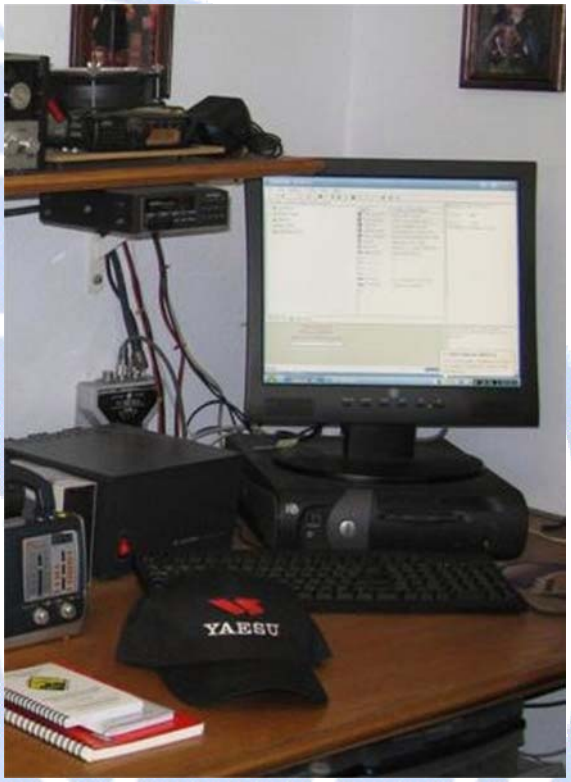
*The general layout of the GERC JOTA 2011 is shown in the top photo (positions of the K6U event facities in the box with yellow dashed lines are relative). The terrain profile below shows the relative positions of the EchoLink® gateway and field station.*


*This shows the geographic relationship of the GERC base station to the mobile VHF radio at the JOTA 2011 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. The base station is at 233 m (above mean sea level); the JOTA site is at ~193m (amsl).*

## *KI6NQG Field EchoLink® Simplex Radio*

Dennis (KI6NQG) uses his field portable 2m VHF radio, a Yaesu FT 8800 dual band (2 meter/70 cm) operating at 10W of power in simplex mode to the GERC EchoLink® gateway. It was powered by a 12 VDC, 28 amp hours AGM (absorbed gas mat) sealed lead acid battery. The antenna is a dual band J-pole using ladderline put into some PVC so it could be mounted at the top of a mast. station (in the foreground of the photo) but are not included in this report which is focusing on the EchoLink® demonstration.]

## *N7YLA-L EchoLink® Gateway Node 358124*




Mark's GERC EchoLink® 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 access EchoLink® via the Internet. Normally the range of a 2m VHF radio is limited to "line of sight". This EchoLink® set up has increased the reach Mark's VHF radio around the world!

## *The Significance of EchoLink® to Scouts*

The Radio Merit Badge is an introduction to the world of radio. A good next step is to study for the FCC Technician amateur radio license. With this basic license, scouts can download the free EchoLink® software (www.echolink.org) and use their home computer connected to the Internet to make "radio" contacts around the world. This is a very low cost alternative to enter the world of amateur radio. Then you can get involved with emergency communications (EmComm) through a group such as GERC (Glendora Emergency Response Communications). Of course, an EchoLink® station needs the Internet to function. In an emergency, loss of the Internet means EchoLink® won't work. But if you have a 2m VHF radio (like the one used at the GERC field JOTA station) you can call another EchoLink® station where the Internet is still working. Then you can be a functioning EmComm station.