HAMATEUR CHATTER

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DV Access Point – My First Look

by Jerry KDØBIK

This is certainly not the first blog posting to be written about the D-STAR Access Point Dongle (DVAP). If you Google the subject you'll find many. I would like to thank Tim Kirby, G4VXE for his excellent blog postings regarding the subject of the DVAP and his time in helping answer a few questions I had regarding the product.

Let me start off by answering the question of why, why did I purchase the DVAP? Yes, I am extremely fortunate to live in a part of the county which has several excellent D-STAR repeaters. As a matter of fact, we have repeaters both here in Denver (W0CDS) and one down in Monument, Colorado (W0TLM) serving the greater Colorado Springs area. From just about any point in Denver, including my home shack (via external antenna) I can connect to the Denver machines and generally anywhere south of Denver can hit the Monument system. So again, why do I need the DVAP device?

This is partly answered by saying my biggest interest in D-STAR is not for local rag chew. I much prefer to either just listen in on an active reflector or conduct short QSO's or even rag chews with a hams around the world. It has been my experience that our local D-STAR repeaters are often used for local rag chew sessions. Again, sometimes I just enjoy listening in on an active reflector and hear hams from the other side of the world talk about whatever they are talking about. The DVAP allows me to essentially connect to any D-STAR reflector I choose and I can listen without interruption or without tying up the local repeaters for just my listening enjoyment. Of course, I can also contribute to the conversations as well and I do enjoy that aspect about D-STAR over EchoLink or IRLP.

You might be wondering exactly what the DVAP is and how it works? Another great question. You may have heard of the DV Dongle which came out a few years ago. It was a little blue box which connected to your PC and allowed up to use a PC headset and microphone to access the D-STAR network. The DVAP is almost the same thing. Notice I said almost. It does connect to a PC or Mac, but you must also own a D-STAR capable transceiver. I have the ICOM IC-92AD.

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DV Access Point – My First Look continued:

In my case, the IC-92AD controls all aspects of the DV Access Point Dongle and functions much the same way as my local D-STAR repeater. The DVAP is essentially my own personal D-STAR repeater/gateway system. I can setup my memories in the IC-92AD to connect to, communicate with and disconnect from all the reflectors on the D-STAR global system. The DVAP has a built-in antenna and is capable of transmitting at 10mw on the 2m amateur band. The range of the DVAP is designed to cover a range of up to 100 yards. Depending on a few variables your results may vary. In my application I plan for now to just operate it indoors with the stock antenna. Of course, I'll test with my outside mounted 2m antenna at some point to see just how far I can walk away from my QTH and still be able to use the DVAP. But the general application is mainly inside my home and perhaps on the back deck or courtyard.
As you can tell from the photo above, the DV Access Point Dongle is relatively small. Inside the box you you'll find the DVAP module with antenna attached, a user guide and a USB cable. The user guide explains briefly about the operation of the DVAP and points you to the DVAP Support Website. From the DVAP website you'll find additional "how to" material and links to the various software you'll need to download and install.

Because I had done some homework on my own before hand, and again thanks to Tim for answering a few questions, I was setup and fully functional in about 10 minutes. During this 10 minutes I downloaded the software and drivers, unpacked the DVAP from the box, connected it to a laptop running Windows 7 and programmed a few memories to connect to the UK reflector. I've been playing around with the DVAP and getting my memories setup on the IC-92AD for about an hour and am really pleased with the DVAP. As I stated, I'll do some more testing and will make sure to blog about my experiences. Currently I'm using the DVAP tool which is what you'll find on the DVAP support website. I do have plans to test another client which offers a little more functionality and allows you to connect direct to reflectors from the software client versus the need to setup from the radio. But I wanted to first checkout this client first.
As I stated earlier, I do have a few tests I want to complete. First, I'll connect the DVAP to my external 2m antenna which is mounted just below my roof line. It might be interesting to know just how far I can walk away from my QTH and still be in communication to the DVAP. Remember the DVAP transmits at 10mw.
I also want to check out the other software client which I briefly discussed. I also plan to setup additional memories on the IC-92AD for other D-STAR reflectors. I'd like to see how it all works from my office location. I do work in a lab which is somewhat of an RF black hole. It might be nice to take the setup to work and enjoy some D-STAR QSO's during my lunch break. Finally, I plan to test the range of the DVAP by attaching my external 2m antenna and walking around the neighborhood. This will probably just a be a one-time test to fulfill my curiosity of just how far 10mw will truly go. I also have plans to test to see how well it would perform when connected to my 3G AT&T data card. This could be useful on longer road trips where either I don't take along HF gear or just to supplement my operation.
I'm sure I'll share my experiences via this blog site.
But for now, it will come in handy in the shack. Speaking of which, I just finished my first QSO on the DVAP while connected to the USA Reflector 001, module C with N9ZGE – Don in Springfield, IL. I was his first D-STAR contact and he was my first DVAP contact. Best of luck to Don as he continues making those D-STAR contacts.
If you would like to learn more about the exciting D-STAR digital mode, please read this.
Until next time…

73 de KD0BIK

Next Regular Meeting

The next meeting will be September 29th at 7:00PM. We meet in the Fellowship Hall of Redemption Lutheran Church, 4057 N Mayfair Road. Use the south entrance.

Please do not call the church for information!

Club Nets

Please check in to our nets on Friday evenings.

Our ten meter SSB net is at **8:30 p.m.** at **28.490 MHz USB.**

Our two meter FM net follows at 9:00 p.m. on our repeater at **145.390 MHz** with a minus offset and a **PL of 127.3 Hz.**

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Chatter Deadline

The **DEADLINE** for items to be published in the **Chatter** is the 15th of each month. If you have anything (announcements, stories, articles, photos, projects) for the 'Chatter, please get it to me before then.

You may contact me or Submit articles and materials by e-mail at: **Kc9cmt@earthlink.net**

or by Post at:

Michael B. Harris

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The Signal Diode

The semiconductor **Signal Diode** is a small non-linear semiconductor device generally used in electronic circuits, where small currents or high frequencies are involved such as in radio, television and digital logic circuits. The signal diode which is also sometimes known by its older name of the **Point Contact Diode** or the **Glass Passivized Diode**, are physically very small in size compared to their larger *Power Diode* cousins.

Generally, the PN junction of a small signal diode is encapsulated in glass to protect the PN junction, and usually have a red or black band at one end of their body to help identify which end is the cathode terminal. The most widely used of all the glass encapsulated signal diodes is the very common *1N4148* and its equivalent *1N914* signal diode. Small signal and switching diodes have much lower power and current ratings, around 150mA, 500mW maximum compared to rectifier diodes, but they can function better in high frequency applications or in clipping and switching applications that deal with short-duration pulse waveforms.

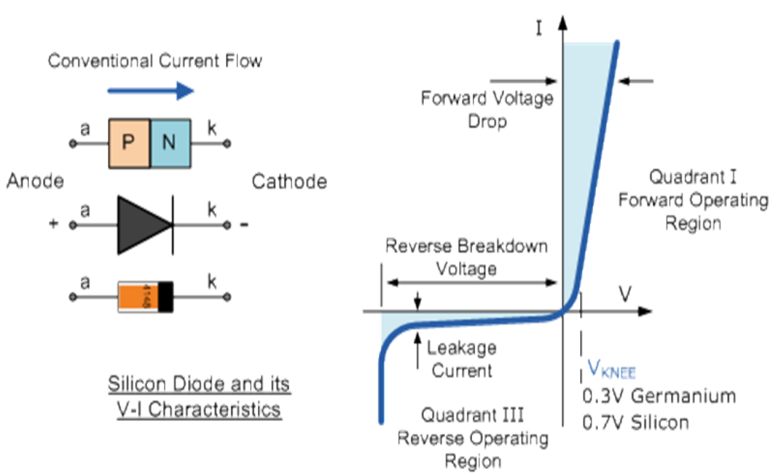
The characteristics of a signal point contact diode are different for both germanium and silicon types and are given as:

- Germanium Signal Diodes - These have a low reverse resistance value giving a lower forward volt drop across the junction, typically only about 0.2-0.3v, but have a higher forward resistance value because of their small junction area.
- Silicon Signal Diodes - These have a very high value of reverse resistance and give a forward volt drop of about 0.6-0.7v across the junction. They have fairly low values of forward resistance giving them high peak values of forward current and reverse voltage.

The electronic symbol given for any type of diode is that of an arrow with a bar or line at its end and this is illustrated below along with the Steady State V-I Characteristics Curve.

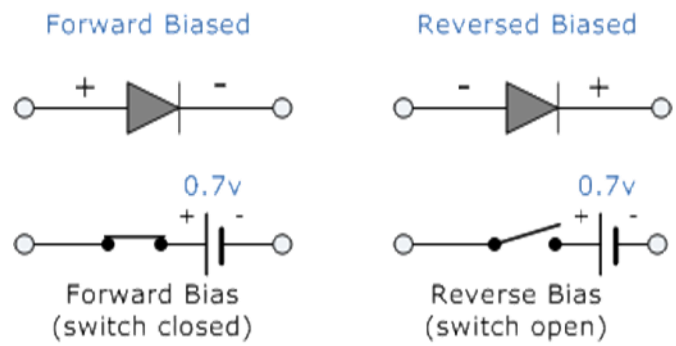
Silicon Diode V-I Characteristic Curve

The arrow points in the direction of conventional current flow



through the diode meaning that the diode will only conduct if a positive supply is connected to the Anode (a) terminal and a negative supply is connected to the Cathode (k) terminal thus only allowing current to flow through it in one direction only, acting more like a one way electrical valve, (Forward Biased Condition). However, we know from the previous tutorial that if we connect the external energy source in the other direction the diode will block any current flowing through it and instead will act like an open switch, (Reversed Biased Condition) as shown below.

Forward and Reversed Biased Diode



Then we can say that an ideal small signal diode conducts current in one direction (forward-conducting) and blocks current in the other direction (reverse-blocking). Signal Diodes are used in a wide variety of applications such as a switch in rectifiers, limiters, snubbers or in wave-shaping circuits.

Signal Diode Parameters

Signal Diodes are manufactured in a range of voltage and current ratings and care must be taken when choosing a diode for a certain application. There are a bewildering array of static characteristics associated with the humble signal diode but the more important ones are.

1. Maximum Forward Current

The **Maximum Forward Current** ($I_{F(max)}$) is as its name implies the *maximum forward current* allowed to flow through the device. When the diode is conducting in the forward bias condition, it has a very small "ON" resistance across the PN junction and therefore, power is dissipated across this junction (*Ohm´s Law*) in the form of heat. Then, exceeding its ($I_{F(max)}$) value will cause more heat to be generated across the junction and the diode will fail due to thermal overload, usually with destructive consequences. When operating diodes around their maximum current ratings it is always best to provide additional cooling to dissipate the heat produced by the diode.

For example, our small 1N4148 signal diode has a maximum current rating of about 150mA with a power dissipation of 500mW at 25°C. Then a resistor must be used in series with the diode to limit the forward current, ($I_{F(max)}$) through it to below this value.

2. Peak Inverse Voltage

The **Peak Inverse Voltage** (PIV) or *Maximum Reverse Voltage* ($V_{R(max)}$), is the maximum allowable **Reverse** operating voltage that can be applied across the diode without reverse breakdown and damage occurring to the device. This rating therefore, is usually less than the "avalanche breakdown" level on the reverse bias characteristic curve. Typical values of $V_{R(max)}$ range from a few volts to thousands of volts and must be considered when replacing a diode.

The peak inverse voltage is an important parameter and is mainly used for rectifying diodes in AC rectifier circuits with reference to the amplitude of the voltage were the sinusoidal waveform changes from a positive to a negative value on each and every cycle.

The Experimenters Bench

3. Total Power Dissipation

Signal diodes have a **Total Power Dissipation**, ($P_{D(max)}$) rating. This rating is the maximum possible power dissipation of the diode when it is forward biased (conducting). When current flows through the signal diode the biasing of the PN junction is not perfect and offers some resistance to the flow of current resulting in power being dissipated (lost) in the diode in the form of heat. As small signal diodes are nonlinear devices the resistance of the PN junction is not constant, it is a dynamic property then we cannot use Ohms Law to define the power in terms of current and resistance or voltage and resistance as we can for resistors. Then to find the power that will be dissipated by the diode we must multiply the voltage drop across it times the current flowing through it: P_D = VxI

4. Maximum Operating Temperature

The **Maximum Operating Temperature** actually relates to the *Junction Temperature* (T_J) of the diode and is related to maximum power dissipation. It is the maximum temperature allowable before the structure of the diode deteriorates and is expressed in units of degrees centigrade per Watt, (^{o}C/W). This value is linked closely to the maximum forward current of the device so that at this value the temperature of the junction is not exceeded. However, the maximum forward current will also depend upon the ambient temperature in which the device is operating so the maximum forward current is usually quoted for two or more ambient temperature values such as 25^{o}C or 70^{o}C.

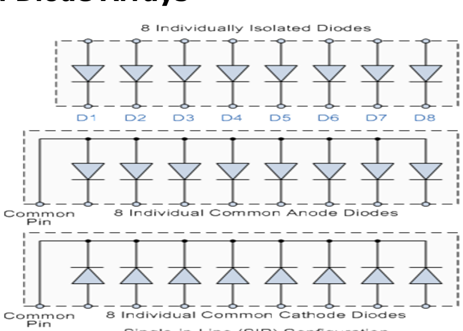
Then there are three main parameters that must be considered when either selecting or replacing a signal diode and these are:

The Reverse Voltage Rating
The Forward Current Rating
The Forward Power Dissipation Rating

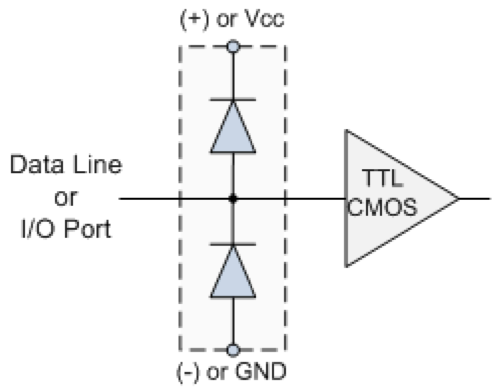
Signal Diode Arrays

When space is limited, or matching pairs of switching signal diodes are required, diode arrays can be very useful. They generally consist of low capacitance high speed silicon diodes such as the 1N4148 connected together in multiple diode packages called an array for use in switching and clamping in digital circuits. They are encased in single inline packages (SIP) containing 4 or more diodes connected internally to give either an individual isolated array, common cathode, (CC), or a common anode, (CA) configuration as shown.

Signal Diode Arrays



Signal diode arrays can also be used in digital and computer circuits to protect high speed data lines or other input/output parallel ports against electrostatic discharge, (ESD) and voltage transients. By connecting two diodes in series across the supply rails with the data line connected to their junction as shown, any unwanted transients are quickly dissipated and as the signal diodes are available in 8-fold arrays they can protect eight data lines in a single package.



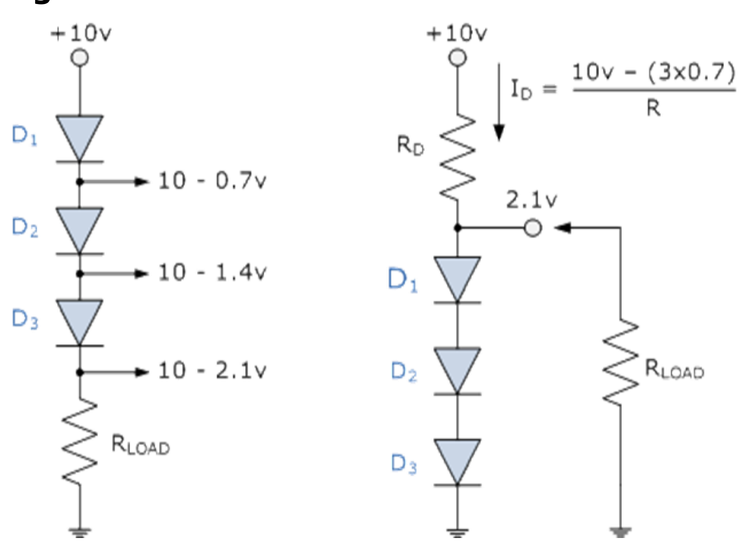
CPU Data Line Protection

Signal diode arrays can also be used to connect together diodes in either series or parallel combinations to form voltage regulator or voltage reducing type circuits or to produce a known fixed voltage. We know that the forward volt drop across a silicon diode is about 0.7V and by connecting together a number of diodes in series the total voltage drop will be the sum of the individual voltage drops of each diode. However, when signal diodes are connected together in series, the current will be the same for each diode so the maximum forward current must not be exceeded.

Connecting Signal Diodes in Series

Another application for the small signal diode is to create a regulated voltage supply. Diodes are connected together in series to provide a constant DC voltage across the diode combination. The output voltage across the diodes remains constant in spite of changes in the load current drawn from the series combination or changes in the DC power supply voltage that feeds them. Consider the circuit below.

Signal Diodes in Series



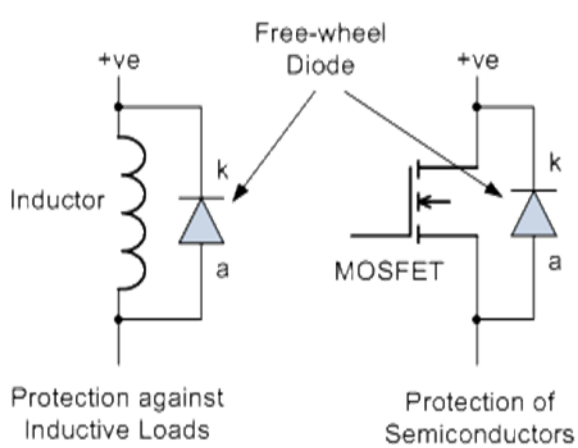
As the forward voltage drop across a silicon diode is almost constant at about 0.7v, while the current through it varies by relatively large amounts, a forward-biased signal diode can make a simple voltage regulating circuit. The individual voltage drops across each diode are subtracted from the supply voltage to leave a certain voltage potential across the load resistor, and in our simple example above this is given as 10v - (3 x 0.7v) = 7.9v. This is because each diode has a junction resistance relating to the small signal current flowing through it and the three signal diodes in series will have three times the value of this resistance, along with the load resistance R, forms a voltage divider across the supply.
By adding more diodes in series a greater voltage reduction will occur. Also series connected diodes can be placed in parallel with the load resistor to act as a voltage regulating circuit. Here the voltage applied to the load resistor will be 3 x 0.7v = 2.1v. We can of course produce the same constant voltage source using a single *Zener Diode*. Resistor, R_D is used to prevent excessive current flowing through the diodes if the load is removed.

Freewheel Diodes

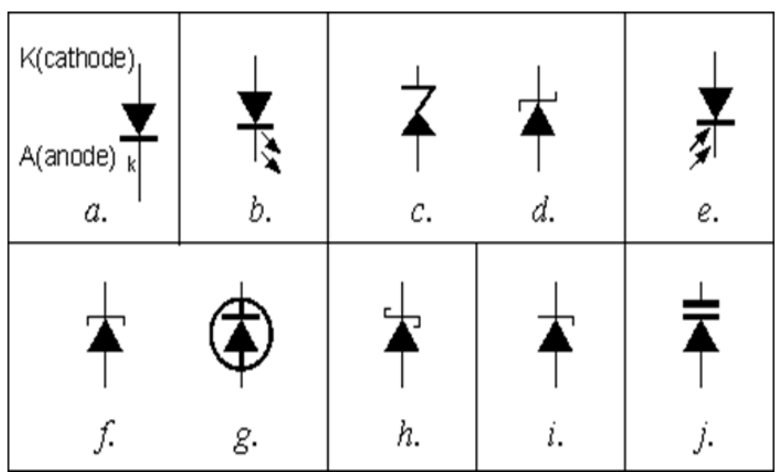
Signal diodes can also be used in a variety of clamping, protection and wave shaping circuits with the most common form of clamping diode circuit being one which uses a diode connected in parallel with a coil or inductive load to prevent damage to the delicate switching circuit by suppressing the voltage spikes and/or transients that are generated when the load is suddenly turned "OFF". This type of diode is generally known as a "Free-wheeling Diode" or **Freewheel diode** as it is more commonly called.

The **Freewheel diode** is used to protect solid state switches such as power transistors and MOSFET's from damage by reverse battery protection as well as protection from highly inductive loads such as relay coils or motors, and an example of its connection is shown below.

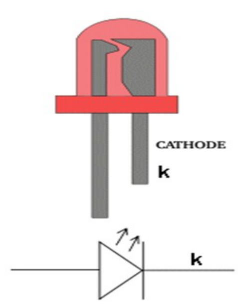
Use of the Freewheel Diode



Modern fast switching, power semiconductor devices require fast switching diodes such as free wheeling diodes to protect them form inductive loads such as motor coils or relay windings. Every time the switching device above is turned "ON", the freewheel diode changes from a conducting state to a blocking state as it becomes reversed biased. However, when the device rapidly turns "OFF", the diode becomes forward biased and the collapse of the energy stored in the coil causes a current to flow through the freewheel diode. Without the protection of the freewheel diode high di/dt currents would occur causing a high voltage spike or transient to flow around the circuit possibly damaging the switching device.
Previously, the operating speed of the semiconductor switching device, either transistor, MOSFET, IGBT or digital has been impaired by the addition of a freewheel diode across the inductive load with Schottky and Zener diodes being used instead in some applications. But during the past few years however, freewheel diodes had regained importance due mainly to their improved reverse-recovery characteristics and the use of super fast semiconductor materials capable at operating at high switching frequencies.
Other types of specialized diodes not included here are Photo-Diodes, PIN Diodes, Tunnel Diodes and Schottky Barrier Diodes. By adding more PN junctions to the basic two layer diode structure other types of semiconductor devices can be made. For example a three layer semiconductor device becomes a *Transistor*, a four layer semiconductor device becomes a Thyristor or Silicon Controlled Rectifier and five layer devices known as Triacs are also available.



Diode symbols: a - standard diode, b - LED,



Early Radio: Vietnam

Creation of the 1st Signal Brigade Organization and Operation

General Westmoreland has referred to 1966 as "The Year of Development" for the U.S. forces in the Republic of Vietnam, and most assuredly it was for the Army communications effort. Yet the technical developments during the expansion of communication services at that time, although significant, were overshadowed at first by the attention given at the highest levels of Army command to eliminating the fragmented control that hampered the communications effort in the Republic of Vietnam.

Crucial Decisions

The decision by the Department of the Army at the turn of 1965-1966 to return the Strategic Communications Command's Vietnam signal elements to the operational control of the Commanding General, US Army, Vietnam, was made in direct and immediate response to General Westmoreland's "fragmentation" message of 19 October 1965. This arrangement, however, was recognized by the Army as only temporary; further organizational effort was required to attain a completely satisfactory solution. General Creighton W. Abrams, Vice Chief of Staff of the Army, therefore asked US Army, Pacific, in coordination with the Strategic Communications Command, to develop a plan for the organization of a US Army Signal Command, Vietnam, to include not only all signal units of US Army, Vietnam, above the field force level, but also elements of the Strategic Communications Command that were in Vietnam. General Abrams further specified that this new command be headed by a brigadier general who would serve in a double or dual-hat capacity, both as communications electronics staff officer for the US Army component in Vietnam and as the commanding general of the new communications command. Colonel Robert D. Terry, who was shortly to become a brigadier general, was given the two jobs.

US Army, Pacific, completing the plans early in 1966, recommended the formation of a signal brigade to be assigned to the Strategic Communications Command but to come under the operational control of US Army, Vietnam. To implement this proposal, the Department of the Army on 1 April 1966 authorized the activation of the Strategic Communications Command Signal Brigade, Southeast Asia. Later, on 26 May 1966, the embryo unit received its ultimate designation, 1st Signal Brigade.

Thus a single, unified structure to control and direct US Army communications effort in the Republic of Vietnam was authorized for the second time. Previously, in 1962, all communications responsibility had rested with the 39th Signal Battalion. But events and decisions had outdated this organization and restructuring was overdue. The signal command as formed in 1966 not only gave communications responsibility in Vietnam a new direction, but also closed a major gap that had existed between signal units and managers of communications throughout Southeast Asia.

The 1st Signal Brigade soon grew larger than a division, becoming the largest signal organization by far in the history of the US Army. Brigade headquarters in its first four months grew from an austere three officers to a strength of about two hundred. The first troops the brigade acquired were those of the 2d Signal Group. On 1 July 1966, Brigadier General Robert D. Terry reorganized the fledgling command by limiting the 2d Signal Group's responsibility to the III and IV Corps Tactical Zones only and by charging the newly arrived 21st Signal Group with communications responsibility in the I and II Corps Tactical Zones.

Thereafter, as new signal units arrived in Vietnam for assignment to the brigade or were activated in Vietnam, General Terry incorporated them in either the 21st Signal Group in the north or the 2d Signal Group in the south. And arrive they did. By the end of 1966 the 2d and 21st Signal Groups each comprised six battalions and each totaled well over 5,000 men.

Communications Support for Army and Corps Areas

These units of the 1st Signal Brigade maintained the area communications systems throughout the country. The area communications system is a concept whereby a signal unit, within its geographical area of responsibility, provides support to all military units-Army, Navy, Marine, Air Force, or Coast Guard-that require communications-electronics to supplement their organic capability. The US Army Signal Corps refers to this service as the Army Area Communications System; however, the US Army, Vietnam, changed the designation to Corps Area Communications System in order to identify more closely with the geographical areas being served, that is, the four corps tactical zones, which were redesignated in 1970 as military regions.

Signalmen of the 2d and 21st Signal Groups operated message centers and telephone switchboards, maintained extensive networks of radio relay systems, and constructed telephone cable and wire lines between and within the increasing number of Army bases. The area communications system in Vietnam departed from the Army's signal doctrine based on the grid concept. There were reasons for this variation. First, the area communication paths either connected regional nodal centers or extended the tails to isolated elements that were not organically self-sufficient. Second, the geographical distribution of base camps and other vital installations dictated a linear, rather than a rectangular, arrangement. The classic grid advantage was preserved, however, by the brigade's capacity to provide alternate routing between key points.

With the relief afforded by both the increase in signal troops and the establishment of even a partial corps area communications system, the vital matter of communications in support of the military advisers could finally be taken up. Before the end of 1966, General Terry had assigned a signal battalion to support the US advisory elements in each of the four corps tactical zones, providing area communications support for the advisers and for the South Vietnamese Army divisions. These important signal battalions were the 37th Signal Battalion in the I Corps Tactical Zone at Da Nang, the 43d in the II Corps Zone at Pleiku, the 44th in the III Corps Zone near Bien Hoa, and the 52d in the IV Corps Zone at the provincial capital of Can Tho in the Mekong Delta.

Two battalions of the 2d Signal Group had missions that differed from the rest of the units in the corps tactical zone signal groups. The 40th Signal Construction Battalion was unique within the US Army; the 69th Signal Battalion (Army) , because of its size and responsibilities, became the nucleus of yet another signal battalion.

The 40th Signal Construction Battalion, the only heavy communications cable construction battalion in the active US Army at that time, arrived in Vietnam in the fall of 1966. The battalion immediately dispersed its companies and construction platoons the length and breadth of South Vietnam. By the end of 1970 this remarkable unit had installed over 500

Early Radio: Vietnam

miles of multipair cable within military cantonments under the most trying conditions that can be imposed by both enemy and friendly forces, having to cope

SIGNALMEN OPERATE A POSTHOLE DIGGER AT CHU LAI, *where cable telephone poles are being installed.*

with the Viet Cong's mortars and rockets and the Army's ubiquitous bulldozers. Bulldozers used in construction work invariably uproot or knock down more cables and wire lines or poles than are destroyed by enemy action.

The Saigon area had the largest aggregation of headquarters, camps, and stations in the land. The installation and operation of the myriad of communications in support of this area was the taxing job of the 69th Signal Battalion after its arrival in late 1965. When the development of the huge Long Binh military complex in October 1966 necessitated communications support for Long Binh Post, the 69th Signal Battalion was assigned the job. 'The battalion consisted of five signal companies, each organized to provide a specific communications service. Because of the distance involved from the 69th's home station in Saigon, it was necessary to station at Long Binh Post detachments from each company of the battalion. Since command and control problems resulted from this arrangement, the brigade commander decided to form two battalions from the assets of the 2,000-man 69th Signal Battalion. Reorganization was completed on 15 August 1967, with the 44th Signal Battalion gaining the personnel and equipment of the 69th's assets at Long Binh. It also acquired the mission of providing communications support for the Long Binh complex, including the headquarters of the US Army, Vietnam, and cryptologistic support for the entire country. The 69th Signal Battalion retained the responsibility for signal support in the Saigon area, including the headquarters of the US Military Assistance Command, Vietnam.

Both the 69th and the 44th Signal Battalions were assigned to Colonel Blaine O. Vogt's 160th Signal Group, which had arrived in Vietnam in the spring of 1967. 'This group headquarters, in addition to assuming the job of area and headquarters support assigned to the 44th and 69th Signal Battalions in the Saigon-Long Binh areas, was to control and direct other important communications activities in Vietnam. The 40th Signal Construction Battalion with its cable construction mission was assigned to the 160th Signal Group. The group reorganized and molded into an effective operation the US Army's countrywide communications security logistics support activities. Another traditional Signal Corps responsibility of audio-visual (photographic) support was given to the 160th on a countrywide basis. This task included backup combat photographic support to the field forces and to divisions which had their own organic audiovisual facilities. And finally the 160th assumed the responsibility for the operation of the Southeast Asia Signal School, which had been established in June of 1966.

By the end of 1967 these three groups of the 1st Signal Brigade controlled and directed an even dozen battalions. The 2d and 21st Signal Groups provided the area communications support in the four corps tactical zones; 160th Signal Group provided headquarters support in the Saigon and Long Binh area, as well as cable construction, photographic, and communications security logistics support throughout the country.

The circuits and lines of the Corps Area Communications System operated by these groups merged at many points into the large backbone system, known from 1966 as the Integrated Wideband Communications System. This long-haul system was operated by thousands of men from the 1st Signal Brigade who were organized into battalions that constituted the US Army Regional Communications Group in Vietnam.

Regional Communications Group

The US Army Regional Communications Group evolved both from the US Army Strategic Communications Command, Vietnam, set up in 1965 by Lieutenant Colonel Jerry Enders, and from the gateway facilities at Phu Lam and Nha Trang, which had remained under the command of the Strategic Communications Command, Pacific, until the 1st Signal Brigade was organized on 1 April 1966. The big communications facilities and systems operated by these organizations were tagged as "fixed" and were often spoken of as "long-lines." As early as February 1966, Colonel Robert D. Terry and his planners were considering a Long-Lines Group to operate the gateway facilities at Phu Lam and Nha Trang and to provide the long-haul communications between DA Nang, Pleiku, Qui Nhon, Nha Trang, Dalat, Cam Ranh Bay, Phu Lam, and Vung Tau. This plan was realized on 4 July 1966 when the US Army Regional Communications Group was activated. At that time, the group consisted of the Long-Lines Battalion North, later the 361st Signal Battalion, for control and management of the long-haul communications in the two northern corps zones, and the large communication facilities in Nha Trang and Phu Lam. Later, the Long-Lines Battalion South, finally designated the 369th Signal Battalion, was activated and, by December 1966, the DA Nang message relay facility became operational under the US Army Regional Communications Group. All three message relay facilities were operated by battalion-size units and were in fact designated in mid-1967 as Provisional Signal Battalions Phu Lam, Nha Trang, and Da Nang.

Early Radio: Vietnam

Signal Units in Thailand

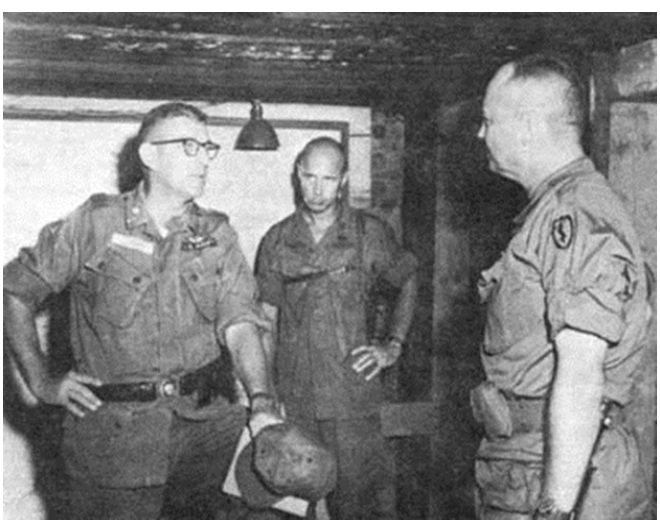
There was still another signal group under the 1st Signal Brigade-this one in Thailand. Early in 1966 Brigadier General John E. Kelsey, Deputy Commanding General, Strategic Communications Command, had visited with the Commanding General, US Military Assistance Command, Thailand, Major General Richard G. Stilwell. They agreed that all US Army Signal units in Thailand should be organized into one signal group. This group was first designated Strategic Communications Command Signal Group, Thailand, under the command of Lieutenant Colonel Harold J. Crochet, and was organized to be effective 1 May 1966. It acquired all US Army communications facilities in Thailand. The group was redesignated in September 1966 as the 29th Signal Group, under the command of the 1st Signal Brigade in Saigon, but remained under the operational control of General Stilwell, the top US commander in Thailand. Later, in mid-1967, this operational control passed to the Military Assistance Command's Army component, US Army Support, Thailand.

Thus a dual-hat role evolved in Thailand as well as in Vietnam; the senior signal commander in each country also served as the principal communications-electronics staff officer for the Army component commander. The 29th Signal Group's organization and concept of operation was similar to that of its parent unit, the 1st Signal Brigade. By the end of 1967, the group consisted of the 379th Signal Support Battalion and two provisional support companies to provide the required area communications support in Thailand; the 442d Signal Battalion, a long-lines unit, to operate and maintain the wideband communication links and sites in Thailand; and two provisional battalions to man the large message relay facilities in Bangkok and Korat.

By the end of 1967 the troop units of the 1st Signal Brigade consisted of twenty-one battalions organized into five groups and totaled about 20,000 men. Nearly all of these units arrived or were activated in Southeast Asia in the short period from April through December 1966.

The Signal Brigade in 1967

These units of the 1st Signal Brigade, along with the combat signal battalions, companies, and platoons organic to the fighting forces, furnished the vital communications needed to support expanding operations in Southeast Asia. The huge buildup of US and other Free World Forces had resulted in an unprecedented demand for communications, from long-haul data circuitry to combat radio nets, taxing the resources of both the signal battalions of the combat forces and the 1st Signal Brigade.



GENERAL TERRY VISITS THE 2D BRIGADE, 25TH INFANTRY DIVISION

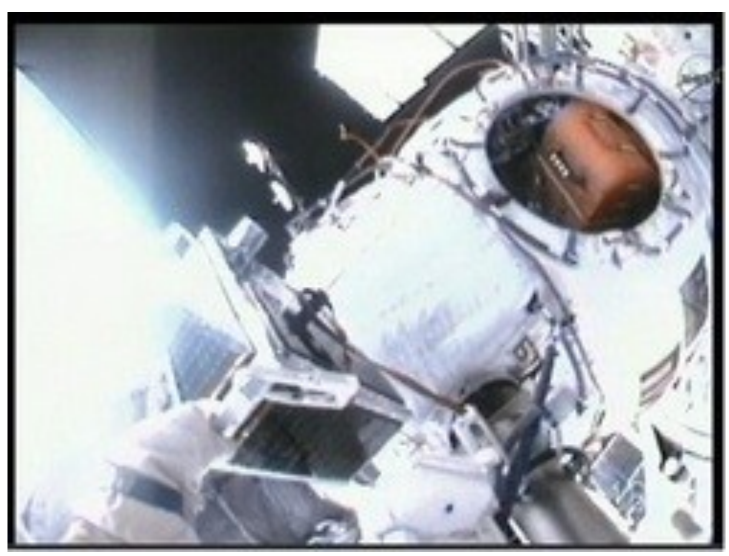
MARINES
THE FEW. THE PROUD.

FROM THE ARRL NEWSLETTER

Amateur Radio in Space: After Delays, ARISSat-1 Deployed from ISS

Amateur Radio has a new satellite! Despite concerns that led to an almost four hour delay in deployment from the International Space Station, ARISSat-1/KEDR is in operation. According to reports flowing in from around the world, both the transponder and telemetry are working. Cosmonauts Sergei Volkov, RU3DIS, and Alexander Samokutyaev, successfully deployed Amateur Radio's newest satellite: ARISSat-1/KEDR. The deployment -- originally scheduled to occur at 1457 UTC on Wednesday, August 3 -- was delayed due to antenna concerns. Read more here.

Sergei Volkov, RU3DIS, holds ARISSat-1 in his hand shortly before the decision to delay its deployment. [Screengrab from NASA TV]



Testing & Local Swapfests

VE Testing

Saturday, September 24th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, October 29th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, November 26th, 2011 - AES - 9:30 AM-11:15 AM

ALL testing takes place at: Amateur Electronic Supply 5720 W. Good Hope Rd. Milwaukee, WI 53223

Area Swapfests:

August 6th **WIARC Swapfest** Location: Quincy, IL
ARRL Hamfest, Western Illinois ARC
Website: http://www.w9awe.org/

August 13th 2011 Sturtevant, Wi

Racine Megacycle Club SwapFest

Website https://sites.google.com/site/kb9zaf/

Working Committees

Field Day

- Open

FM Simplex Contest

- Joe – N9UX
- Jeff – K9VS
- Brian— K9LCQ

Ticket drum and drawing

- Tom – N9UFJ
- Jackie – No Call

Newsletter Editor

- Michael-KC9CMT

Webmaster

- Joe Schwartz—N9UX

Refreshments

- Hal-KB9OZN

Membership Information

The Hamateur Chatter is the newsletter of MRAC (Milwaukee Radio Amateurs' Club), a not for profit organization for the advancement of amateur radio and the maintenance of fraternalism and a high standard of conduct. MRAC Membership dues are $17.00 per year and run on a calendar year starting January 1st. MRAC general membership meetings are normally held at 7:00PM the last Thursday of the month except for November when Thanksgiving falls on the last Thursday when the meeting moves forward 1 week to the 3rd Thursday and December, when the Christmas dinner takes the place of a regular meeting. Club Contact Information Our website address http://www.w9rh.org

Telephone (414) 332-MRAC (6722)

Address correspondence to:

MRAC, Box 240545, Milwaukee, WI 53223

Email may be sent to

w9rh@arrl.net

Our YAHOO newsgroup:

http://groups.yahoo.com/group/MRAC-W9RH/

CLUB NETS:

- Our Six Meter SSB net is Thursday at 8:00PM on 50.160 MHz USB
- Our Ten Meter SSB net is Friday at 8:00PM on 28.490 MHz ± 5 KHz USB.
- Our Two Meter FM net follows the Ten meter net at 9:00PM on our repeater at 145.390MHz - offset (PL 127.3)

Milwaukee Area Nets

Mon.8:00 PM 3.994 Tech Net

Mon.8:00 PM 146.865- ARES Walworth ARRL News Line

Mon.8:00 PM 146.445 Emergency Net

Mon.8:00 PM 146.865- ARES Net Walworth

Mon.8:45 PM 147.165- ARRL Audio News

Mon. 9:15 PM 444.125+ Waukesha ARES Net

Mon.9:00 PM 147.165- Milwaukee County ARES Net

Tue.9:00 AM 50.160 6 . Mtr 2nd Shifter's Net

Tue. 7:00 PM 145.130 MAARS Trivia Net

Tue. 8:00 PM 7.035 A.F.A.R. (CW)

Wed. 8:00 PM 145.130 MAARS Amateur Radio Newsline

Wed. 9:00 PM 145.130 MAARS IRLP SwapNet d FM-38 Repeaters (IRLP 9624)

Thur. 8:00 PM 50.160, 6 Mtr SSB Net

Thur. 9:00 PM 146.910 Computer Net

Fri. 8:30 PM 28.490 MRAC W9RH 10 Mtr Net SSB

Fri. 9:00 PM 145.390 W9RH 2 Mtr. FM Net

Sat. 9:00 PM 146.910 Saturday Night Fun Net

Sun 8:30 AM 3.985 QCWA (Chapter. 55) SSB Net

Sun 9:00 AM 145.565 X-Country Simplex Group

Sun 8:00 PM 146.91 Information Net

Sun 8:00 PM 28.365 10/10 International Net (SSB)

Sun 9:00 PM 146.91 Swap Net

2 meter repeaters are offset by 600KHz - - 70 centimeter repeaters are offset by 5 MHz

SSB frequencies below 20 meters are LSB and for 20 Mtr and above are USB.

All-Time Climate Extremes for WI

Variable	Location	Value	Date	Station ID	Status
24-hr Precipitation	Mellen	11.72 in.	June 24, 1946	475286	E
24-hr Snow Fall	Neillsville	26.0 in.	December 26-27, 1904	475808	E
Snow Depth	Flambeau Reservoir	83 in.	April 6, 1933	472814	N
Maximum Temperature	Wisconsin Dells	114 °F	July 13, 1936	479319	E
Minimum Temperature	Couderay	-55 °F	February 2 & 4, 1996	471847	EI