

**Digital  
Amateur  
Radio  
Emergency  
Network  
of West Virginia**

*Established by Wood County Emergency Communications inc.  
PO Box 3328, Parkersburg, WV. 26103*

This plan is a general guide for the operation and setup of a remote message forwarding station used in the D.A.R.E.N. system. It is not intended to cover all possible situations that may arise...

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# Digital Amateur Radio Emergency Network (D.A.R.E.N.) Plan

## I. INTRODUCTION

### **A. SCOPE:**

This plan provides guidance for setting up remote or local stations dedicated to a State wide (Packet Radio) *Digital Amateur Radio Emergency Network (D.A.R.E.N.)* that will be used to provide support to all State, County, and City Governments in West Virginia. This plan can not incorporate all possible variations of equipment or technological changes evolving after its development. It is not intended as a guide for setting up home stations for use on the D.A.R.E.N. system.

### **B. PURPOSE:**

1. To establish and maintain a reliable Computer Based digital network that will provide fast, congestion free communications for Natural or Man made Disasters, Disaster Exercises, and Routine NTS type traffic.
2. To provide Digital Communications to as much of the State of West Virginia as possible.
3. To provide Back-up and Overload Communications to all Public Safety agencies and Emergency Services when normal communications are overloaded, inoperative, or just nonexistent.
4. To coordinate a uniform Digital Network that will make it easy for operators to connect from one point to another, and ultimately to the State Office of Emergency Services.

## II. AUTHORITY

Authority to establish an Emergency Radio Network is given in Federal Communications Commission Rules and Regulations PART 97.1, 97.111, 97.205, 97.301, 97.305, 97.307, 97.309, 97.313, 97.401, 97.403 and 97.407.

## III. DEFINITIONS

### **ALIAS:**

A name given to a NODE, DIGI, or PBBS in lieu of the assigned call sign. This makes it easier for operators of PACKET Radio to remember a path of NODEs, DIGIs, and names of PBBSs from start to finish.

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## **AMATEUR RADIO:**

A radio communications service established by the Federal Communications Commission for the purpose of self-training, intercommunications and technical investigations carried out by amateurs, who are duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest, and to be a source of radio operators in emergencies and time of war.

## **A.R.E.S.:**

Amateur Radio Emergency Service was created by the ARRL to provide back-up and overload communications in emergencies when not declared as such by the responsible government agency.

## **ARRL:**

American Radio Relay League. An organization established to help keep Amateur Radio operators informed of the latest techniques of communications, and be a representative for Amateurs when dealing with the Federal Communications Commission.

## **AUTO FORWARDING:**

Ability to drop traffic on one Bulletin Board and have it Automatically Forwarded to the destination station, without human intervention.

## **BAUD RATE:**

The speed at which digital communications are sent. The standard speed, to be used in this Network, is 1200 baud (approximately 1300 words per minute). Speeds as high as 19.2 Kilobaud are authorized to Amateur Radio.

## **BEACON:**

The automatic transmitting of information from an unattended station at regular intervals.

## **BBS:**

Stands for Bulletin Board System. A BBS is a large message storage and mail forwarding system, that is capable of transferring messages to other BBS's. If the originator of a message wants it over a large area, or the receiver of the message is not in the direct coverage area, the message may automatically be forwarded to another BBS

## **CAP:**

Civil Air Patrol

## **CENTRAL MESSAGE CENTER:**

Large centrally located system operating a regular BBS program, having the ability to forward messages to the individual county PBBS. This is the location that messages entering into and leaving from the D.A.R.E.N. system should use.

## **DIGIPEATER:**

Stands for Digital Repeater, sometimes referred to as DIGI. When it is addressed in a path or route, a DIGIPEATER receives digital information and retransmits the same, with no means of detecting errors in the transmission. (For error detection refer to NODE).

## **DIGITAL:**

A transmission media using a series of pulses or signal levels to convey information.

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**EMERGENCY:**

A situation or message classification of great urgency.

**ERROR DETECTION:**

A means of detecting errors in a digital transmission. If errors are detected, a request for a repeat of transmission is initiated. (Error correction).

**ERROR FREE:**

By using Error Detection the information at the receiving station is virtually error free.

**KEYBOARD TO KEYBOARD:**

The process of direct communication from one terminal station to another terminal station.

**LOCAL AREA NET:**

A Local Area Net should consist of not more than five or six counties in any given area.

**MARS:**

Military Affiliate Radio Service, is Amateur Radio operators handling non-classified messages, on Government frequencies, for Military Personnel in the Armed Forces.

**NET CONTROL:**

Person or Station designated to be in control of any communications Network.

**NETWORK:**

A group of Amateur Radio stations set up thru a chain of NODEs, DIGIs, and PBBSs for a common goal, to provide communications for as many areas as possible. (also known as a NET)

**NODE:**

A NODE is a point of entry to a NETWORK performing switching, routing and concentrating functions. A NODE retains each packet in memory until the next station acknowledges correct receipt, eliminating going back to the originator of the packet for retransmission. When connected to a NODE, the originating station has control of the NODE as if operating at that location.

**NTS:**

National Traffic System. Is a system set up by the ARRL to provide a NETWORK by which messages may be passed from the originator to the addressee.

**NTS TYPE TRAFFIC:**

Any messages that are of a formal design to include; an originator, a destination, a numbering scheme, the date, the time, message text, and a signature. MARS, CAP, RACES, and ARES messages are examples of NTS Type Traffic.

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## **PACKET:**

Packets are packages of Digital information, which are just fragments of a complete message, transmitted over radio. These packets are reunited, at the receiving station, to recreate the original message. Each PACKET transmission is provided with a means to check for errors.

## **PBBS:**

Personal Bulletin Board System. Is a small electronic version of a BBS for storage of messages, either for the operator of the PBBS or for other users. (Sometimes used as a local PBBS).

## **PRIORITY:**

Classification for message traffic indicating a degree of urgency.

## **R.A.C.E.S.:**

*Radio Amateur Civil Emergency Service.* Established by the United States Office of Civil Defense in 1952. R.A.C.E.S. is the Amateur Radio Communications branch of any bona fide Civil Defense or Emergency Service agency.

## **REMOTE STATION:**

An unattended station located as high as possible (usually a hilltop), and centrally located in the area it is intended to service (usually a county).

## **ROUTINE:**

Classification for non-urgent message traffic.

## **STATE WIDE NETWORK:**

A Net that allows check-ins from all counties in the state, but is not restricted to the state. Operators from surrounding states may check-in.

## **TERMINAL STATION:**

A station in which a terminal or keyboard is directly connected to the TNC, and available for operator input. Terminal Stations may be fixed or mobile and should contain a PBBS if left unattended for any period of time.

## **TNC:**

Terminal Node Controller, is the electronic device used to assemble and disassemble packets. Converting digital information to audio (Modulation); and converting audio (from the radio) into digital information, for the terminal, (Demodulation). The TNC is similar to a telephone modem. It is also used at remote Radio Stations, as a DIGIPEATER, NODE, and PBBS.



## **IV. GUIDELINES**

### **A. TECHNICAL**

- 1 The operating frequency of this NETWORK will be 145.690 MHz.
- 2 The RF Power, of radios used at remote stations, should not exceed 50 Watts.
- 3 Antenna height, at remote stations, should be a minimum of 50 ft above ground level.
- 4 The antenna should have a minimum gain of 3dB.
- 5 It is suggested that the TNC for a Remote Station be a KANTRONICS Model KPC-2 or KPC-3<sup>1</sup>, with Version 5.0 or higher firmware. The TNC should be programmed with 4 or preferably more NODE channels and a PBBS with at least 7K of memory.
- 6 The message "YOU HAVE CONNECTED TO A DEDICATED NODE/DIGI/PBBS. PLEASE CONNECT TO EITHER (name of NODE) OR (name of PBBS). THANK YOU 73" should be used in the "CTEXT" parameter<sup>2</sup>
- 7 The message "(Name of County) COUNTY NODE OF THE DIGITAL AMATEUR RADIO "EMERGENCY" NETWORK OF WV - EMERGENCY, PRIORITY, NTS TYPE TRAFFIC ONLY PLEASE", should be used in the "NTEXT" parameter.
- 8 The message "WELCOME TO RACES/ARES/NTS MESSAGE CENTER (NEAR or IN) (the name of the city) WV. \*\*\*EMERGENCY, PRIORITY, NTS TYPE TRAFFIC ONLY PLEASE\*\*\*" should be used in the "PTEXT" parameter.
- 9 To provide easy identification, through a uniform system, of paths and routes, the NODEs, DIGIs, and PBBSs should be given an ALIAS, which resembles the name of the county and city which they are serving or are near.
  - a The ALIAS for each remote NODE and DIGI should be the first four letters of the county they are in, followed by a two letter abbreviation of the state. Example: RANDWV for Randolph County, West Virginia. (See Appendix A.)
  - b The ALIAS for each remote PBBS should be a four letter abbreviation for the city it is in, or located near, followed by a two letter abbreviation for the state. Example: ELKNWV for Elkins, West Virginia. (See Appendix A.)
  - c Each Terminal Station should use a four letter abbreviation for the name of the city, county, or agency they are providing communication services for, followed by a two letter abbreviation of the type of service. Example: ELKNES for Elkins Emergency Services. (See Appendix A)

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<sup>1</sup>Appendix B contains suggested parameter settings for both KPC-2 and KPC-3 TNCs.

<sup>2</sup>Suggestions for Formatting CTEXT, NTEXT and PTEXT are listed in Appendix A. Other Command suggestions are listed in Appendix B.

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- 10 Each remote station should be set up as a NODE, DIGI, and PBBS. The PBBS should be programmed with a minimum of 7K, enough memory to store several NTS type messages.
- 11 There should be *No Cross Channel or Full Service BBS stations* included in this NETWORK. Not having Cross Channel and Full Service BBS stations included will reduce the possibility of non-conforming traffic in the Network.

### B. OPERATION

1. The system should be used on a daily basis to pass ROUTINE NTS Type, MARS, and CAP traffic, to keep operators familiar with the system. During NETs, Drills or Disasters, ROUTINE traffic should be held to a minimum.
2. It is suggested that when using the D.A.R.E.N. message system for Disasters and Exercises that the recommended ARRL message format be adhered to as closely as possible.
3. Local Area Nets can be held on a weekly basis .
4. A State wide Net should be held weekly. Net control should be rotated through-out the state to provide operators with practice in connecting through the various NODEs of the state.
5. Net announcements for State Wide Nets, should be placed on several PBBS Stations for not more than three days before the NET, to inform operators of the location of the Net Control Station.
6. Articles for R.A.C.E.S. or A.R.E.S. Newsletters from one area to another should be allowed, through the NODEs and DIGIs. This traffic may be sent, as long as there is no Emergency, Priority or NET Traffic in operation.
7. The NETWORK should be monitored as much as possible to insure it is being operated properly.
8. On long haul routes, it is best to connect to NODEs where possible. This will allow for Error Detection and correction between NODEs.
9. When connecting to NODEs, if the letter "S" is added after the CALL or ALIAS, the route will stay connected back to that NODE after a disconnect (by the use of "Bye"). This will keep you from having to reestablish an entire path to connect to another station in that area.
10. If connecting to another station requires the use of only one Remote Station, use the DIGI instead of the NODE. This leaves the NODEs available for long haul routes.
11. Most NODEs have only 3 or 4 channels, so during busy times, you may get a "Link busy at (NODE)" message. If this happens, digipeat through it, but *only use digipeating as a last resort.*

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12. All Messages should be posted on PBBS's as "ST" (Send Traffic) so that all connecting stations can see the traffic.
13. Beacons should not be used except during formal NETs and for weather or other emergency announcements.
14. Keyboard to Keyboard communications should be kept to a minimum during disasters, drills, and nets.
15. When disconnecting, don't "Force a Disconnect" by using "CTRL-C". This ties up a NODE channel until it retries out. If you make a mistake when making a connection, and catch it after you have pressed <enter>, you can type "ABORT", then re-try the last command.

### **C. CONTROL OF NETWORK**

1. Control and ownership of the NETWORK should be organizations such as R.A.C.E.S. and A.R.E.S. or Clubs which support their Local Government or Emergency Services.
2. Private ownership of primary Remote and Terminal stations is discouraged and not recommended.
3. Operation of Individual Terminal stations in the D.A.R.E.N System is highly encouraged for D.A.R.E.N. type traffic only.
4. Operators of BBS's, DX Cluster, Buy/Sale/Trade Nets, and other non-formal systems should be asked not to operate them on this frequency.

### **D. PLAN REGISTRATION**

1. As changes are made to this plan, updates will be mailed to those who have registered with Wood County Emergency Communications, PO Box 3328, Parkersburg, WV. 26103-3328. To receive updates you must send in the registration card included at the end of this plan.

## **V. RESOURCES**

### **A. PROVIDING AGENCIES**

Resources for this Network can be provided by any R.A.C.E.S. or A.R.E.S. group, Amateur Radio Clubs that are Emergency Service oriented, Public Safety Agencies, Businesses and Public Utilities that are interested in assisting emergency communications through funding and/or other means.

### **B. COST ESTIMATES**

Estimated Cost of a Remote D.A.R.E.N. Packet radio Station:

<b>EQUIPMENT</b>	<b>QUANTITY</b>	<b>COST</b>
RADIO (an average 45W Rig)	1	250.00
KANTRONICS KPC-3 Packet Controller	1	120.00
COAX (@ .45 Per Foot)	100 Ft.	45.00
12V. BATTERY <sup>3</sup>	1	30.00
Antenna	1	50.00
BATTERY CHARGER	1	30.00
Misc. Mounting and Installing Hardware		50.00
<b>TOTAL ESTIMATED COST:</b>		<b>\$575.00</b>

A Terminal packet station can use the same equipment as a Remote station, Except that it would be located at an EOC, or a Central communications point (Sheriff's Dept., Police Dept., Fire Station, Red Cross, etc.). See Definition of Remote and Terminal packet stations in Section III.

### **C. EQUIPMENT SOURCES**

For those not familiar with the types of equipment described in this section, and how to obtain it, contact Wood County Emergency Communications, PO Box 3328, Parkersburg, WV. 26103-3328, or Phone (304) 679-3470.

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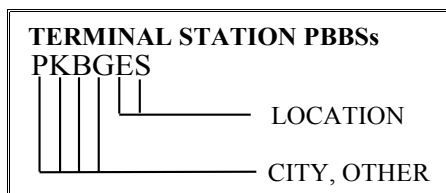
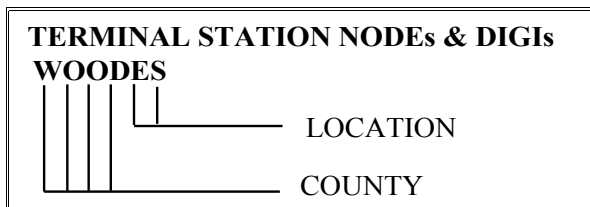
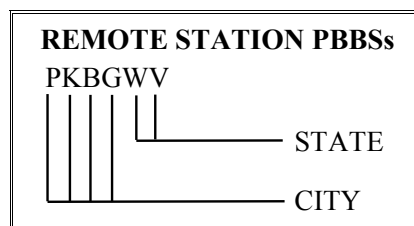
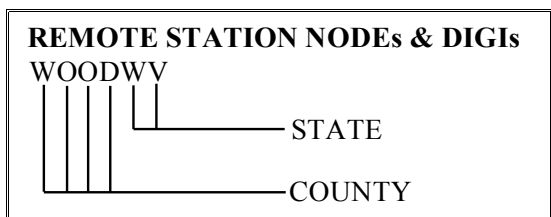
<sup>3</sup>The purpose of the battery and charger is to have Uninterrupted Power during emergencies, when the system is needed the most. The cost can be reduced if an uninterrupted power source is available.

**Appendix A:**

**SUGGESTED ABBREVIATION SETTINGS FOR (NODEs, DIGIs, & PBBs)**

NODEs & DIGIs BY COUNTIES		PBBs by CITIES		NODEs & DIGIs by COUNTIES		PBBs by CITIES	
Barbour	BARB	Philippi	PHIL	Wirt	WIRT	Elizabeth	ELZB
Berkeley	BERK	Martinsburg	MRTN	Wood	WOOD	Parkersburg	PKBG
Boone	BOON	Danville	DNVL	Wyoming	WYOM	Pineville	PINE
Braxton	BRAX	Gassaway	GASS	<b>STATE ABBREVIATIONS:</b>			
Brook	BROO	Wellsburg	WLBG				
Cabell	CABE	Huntington	HUNT	Alabama	AL	Montana	MT
Calhoun	CALH	Grantsville	GNTV	Alaska	AK	North Carolina	NC
Clay	CLAY	Ivydale	IVYD	Arizona	AZ	North Dakota	ND
Doddridge	DODD	West Union	WEST	Arkansas	AR	Nebraska	NE
Fayette	FAYE	Oak Hill	OAKH	California	CA	New Hampshire	NH
Gilmer	GILM	Glenville	GLEN	Colorado	CO	New Jersey	NJ
Grant	GRAN	Petersburg	PTBG	Connecticut	CT	New Mexico	NM
Greenbrier	GREE	Lewisburg	LSBG	Delaware	DE	Nevada	NV
Hampshire	HAMP	Romney	RMNY	Washington DC	DC	New York	NY
Hancock	HANC	Weirton	WEIR	Florida	FL	Ohio	OH
Hardy	HARD	Moorefield	MRFD	Georgia	GA	Oklahoma	OK
Harrison	HARR	Clarksburg	CKBG	Hawaii	HI	Oregon	OR
Jackson	JACK	Ripley	RPLY	Idaho	ID	Pennsylvania	PA
Jefferson	JEFF	Charles Town	CTWN	Illinois	IL	Rhode Island	RI
Kanawha	KANA	Charleston	CHAS	Indiana	IN	South Carolina	SC
Lewis	LEWI	Weston	WEST	Iowa	IA	South Dakota	SD
Lincoln	LINC	Hamlin	HMLN	Kansas	KS	Tennessee	TN
Logan	LOGA	Logan	LOGN	Kentucky	KY	Texas	TX
Marion	MARI	Fairmont	FAIR	Louisiana	LA	Utah	UT
Marshall	MARS	Moundsville	MDSV	Massachusetts	MA	Virginia	VA
Mason	MASO	Point Pleasants	PPNT	Maine	ME	Vermont	VT
McDowell	MCDO	Bradshaw	BRAD	Maryland	MD	Washington	WA
Mercer	MERC	Bluefield	BLFD	Michigan	MI	Wisconsin	WI
Mineral	MINE	Keyser	KEYS	Minnesota	MN	West Virginia	WV
Mingo	MING	Matewan	MTWN	Missouri	MO	Wyoming	WY
Monongalia	MONO	Morgantown	MGTN	Mississippi	MS	<b>LOCAL ABBREVIATIONS:</b>	
Monroe	MONR	Union	UNON	CP.....	Command Post		
Morgan	MORG	Paw Paw	PAWP	ES.....	Emergency Operations Center		
Nicholas	NICH	Summersville	SMVL	HP.....	Hospital		
Ohio	OHIO	Wheeling	WLNG	PD.....	Police Department		
Pendleton	PEND	Franklin	FKLN	RC.....	Red Cross		
Pleasants	PLEA	St. Marys	STMY	SP.....	State Police		
Pocahontas	POCA	Marlinton	MARL	SH.....	Sheriff		
Preston	PRES	Kingwood	KING	EC.....	Emergency Coordinator		
Putnam`	PUTN	Hurricane	HURC	ED.....	Emergency Director		
Raleigh	RALE	Beckley	BECK	WX.....	Weather		
Randolph	RAND	Elkins	ELKN				
Ritchie	RITC	Harrisville	HRVL				
Roane	ROAN	Spencer	SPEN				
Summers	SUMM	Hinton	HNTN				
Taylor	TAYL	Grafton	GRAF				
Tucker	TUCK	Parsons	PRSN				
Tyler	TYLE	Midlebourne	MIDB				
Upshur	UPSH	Buckhannon	BUCK				
Wayne	WAYN	Wayne	WYNE				
Webster	WEBS	Webster Springs	WBSP				
Wetzel	WETZ	New Martinsville	NMAR				

## EXAMPLES FOR MAKING UP SIX LETTER ALIASES:



An example for a place such as Camden Clark Hospital in Parkersburg would be:

NODE/DIGI: WOODCC  
PBBS: PKBGCC

## SUGGESTIONS FOR FORMATTING SIGN ON TEXT:

To have a uniform system when someone connects to a CALL, NODE, or PBBS the following procedure is suggested when entering the CTEXT, NTEXT, and PTEXT parameters.

cmd: CTEXT <space> <control v><sup>4</sup> <enter>  
YOU HAVE CONNECTED TO A DEDICATED NODE/DIGI/PBBS. <control v> <enter>  
PLEASE CONNECT TO EITHER "(name of node)" OR "(name of pbbs)". THANK YOU  
73 <control v> <enter> <space> <enter>

cmd: NTEXT <space> <control v> <enter>  
A (name of county) COUNTY NODE OF THE DIGITAL AMATEUR RADIO "EMERGENCY" NETWORK OF  
WV <control v> <enter>  
EMERGENCY, PRIORITY, NTS TYPE TRAFFIC ONLY PLEASE<sup>5</sup> <control v> <enter> <space> <enter>

cmd: PTEXT <space> <control v> <enter>  
WELCOME TO A RACES/ARES/NTS MESSAGE CENTER (IN or NEAR) (name of city) WV <control v>  
<enter>

<sup>4</sup>Type this character by first pressing and holding the **CONTROL** key then typing a **V**. See reference to PASS in KPC-2 Kantronics Commands manual p. 41; or KPC-3 Reference Manual p. 37.

<sup>5</sup> The word "PLEASE" (PLS) or the word "COUNTY" (CO) may be abbreviated to conserve space if needed.

\*\*\* EMERGENCY, PRIORITY, NTS TYPE TRAFFIC ONLY PLEASE \*\*\* <control v> <enter> <space>  
<enter>

cmd: PERM <enter><sup>6</sup>

## HOW YOUR SCREEN SHOULD LOOK:

To keep the DAREN system as uniform as possible, a properly set up station, should look like the following EXAMPLE messages when connected to a:

### NODE:

```
cmd:*** CONNECTED to RITCWV [11/08/93 16:52:17]
###CONNECTED TO NODE RITCWV(N8NVQ-7) CHANNEL A
```

A RITCHIE COUNTY NODE OF THE DIGITAL AMATEUR RADIO "EMERGENCY" NETWORK OF WV  
EMERGENCY, PRIORITY, NTS TYPE TRAFFIC ONLY PLEASE<sup>5</sup>

ENTER COMMAND: B,C,J,N, or Help ?

### PBBS:

```
cmd:*** CONNECTED to HRVLWV [11/08/93 16:52:55]
[KPC2-5.02-HM$]
7000 BYTES AVAILABLE
```

WELCOME TO RACES/ARES/NTS MESSAGE CENTER NEAR HARRISVILLE, WV  
\*\*\*EMERGENCY, PRIORITY, NTS TYPE TRAFFIC ONLY PLEASE\*\*\*

ENTER COMMAND: B,J,K,L,R,S, or Help >

### THE STATION CALL:

```
cmd:*** CONNECTED to N8NVQ-7 [11/08/93 16:53:24]
```

YOU HAVE CONNECTED TO A DEDICATED NODE/DIGI/PBBS.  
PLEASE CONNECT TO EITHER "RITCWV" OR "HRVLWV". THANK YOU 73

```
*** DISCONNECTED [11/08/93 16:53:28]
```

The blank line below the "CONNECTED to" line, and above the "ENTER COMMAND:" line, is accomplished by using <ctrl V>'s<sup>7</sup> when setting up the "NTEXT", "PTEXT", and "CTEXT".

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<sup>6</sup>In the KPC-3 all parameters are saved by a lithium battery. The Command PERM is not used.

<sup>7</sup>Type this character by first pressing and holding the **CONTROL** key then typing a **V**. See reference to PASS in KPC-2 Kantronics Commands manual; or KPC-3 Reference Manual.

## MEMORY USAGE:

The KANTRONICS KPC-3, version 5.0 and above can be upgraded to 512k of RAM. (MAXUSERS should always be set at "1"). This will allow you to increase the number of Node channels for use by connecting stations.

Remember that the Main County NODEs should have enough NODE Channels to allow several stations to connect at one time. The Main County NODEs should be the ones that are located on a Hill or Mountain Tops, and shouldn't need a lot of PBBS Memory. This is where most of the short messages for the county should be left. The high memory stations should be located at lower profile locations, and have larger PBBS Memories for storing messages such as "RACES BULLETINS", "ARES BULLETINS", "DAREN NEWS" "NODE LIST", and other "Emergency , Priority, and NTS Type" traffic.

Remember, changing the size of the PBBS, the length of Connect Messages, and all other text stored in the TNC will alter the amount of memory available for NODES.

*It is suggested that for 32K Memory (Basic out of the box memory), there should be 7K allocated for PBBS, allowing for 4 NODE channels. When upgrading to 128K of memory, allocating 16K of PBBS memory will give approximately 24 NODE Channels*

## AUTO FORWARDING:

When setting up a station for Auto Forwarding, several items must be taken into account.

The path to the DAREN Message Center should be as short as possible. Try not to Digipeat through more than one Digipeater. Use the PBFORWARD command to set this path.

EXAMPLE: PBFORWARD DAREN VIA KANAWV AFTER 1

Even though the word "HOUR" shows up after the "1" , don't type it in.

The HTEXT must have something in it.

EXAMPLE: PKBGWV.ZONE3.WV.USA.NA. [Parkersburg, WV 26101]

The ZONE Number is the West Virginia ARRL ARES ZONE.

Make sure that the following TNC Parameters are set correctly.

<b>PFHEADER</b>	<b>ON</b>
<b>PBHOLD</b>	<b>OFF</b>
<b>PKBILLFW</b>	<b>ON</b>
<b>PBPERSON</b>	<b>OFF</b>
<b>PBREVERSE</b>	<b>OFF</b>



## Appendix B:

### KANTRONICS SUGGESTED PARAMETER SETTINGS

Parameter	KPC-3 V6.0	KPC-3 V5.1	KPC-3 V5.0	KPC-2 V5.0
8BITCONV	ON	ON	ON	ON
AX25L2V2	ON	ON	ON	ON
<b>ABAUD</b>	<i>(Set to match your Terminal or Computers Baud Rate)</i>			
AUTOLF	ON	ON	ON	ON
AXDELAY	0	0	0	0
AXHANG	0	0	0	0
<b>BEACON</b>	<b>EVERY 0 (disabled)</b>	<b>EVERY 0 (disabled)</b>	<b>EVERY 0 (disabled)</b>	<b>EVERY 0 (disabled)</b>
BKONDEL	ON	ON	ON	ON
BLT		N/A	N/A	N/A
1 EVERY	00:00:00	N/A	N/A	N/A
2 EVERY	00:00:00	N/A	N/A	N/A
3 EVERY	00:00:00	N/A	N/A	N/A
4 EVERY	00:00:00	N/A	N/A	N/A
<b>BTEXT</b>	<b>(Leave Blank -- See Operation paragraph 11 for instructions)</b>			
BUDLIST	OFF	OFF	OFF	OFF
BUDCALLS	NONE	NONE	NONE	NONE
A Link state is:	DISCONNECTED	DISCONNECTED	DISCONNECTED	
CANLINE	\$18 (CTRL-X)	\$18 (CTRL-X)	\$18 (CTRL-X)	\$18
CANPAC	\$19 (CTRL-Y)	\$19 (CTRL-Y)	\$19 (CTRL-Y)	\$19
<b>CD</b>	<b>INTERNAL</b>	<b>INTERNAL</b>	<b>INTERNAL</b>	<b>INTERNAL</b>
CHECK	0 (disabled)	0 (disabled)	0	0
CMDTIME	1 (1 sec)	1 (1 sec)	1	1
<b>CMSG</b>	<b>DISC</b>	<b>DISC</b>	<b>DISC</b>	<b>DISC</b>
COMMAND	\$03 (CTRL-C)	\$03 (CTRL-C)	\$03 (CTRL-C)	\$03
CONLIST	OFF	OFF	OFF	OFF
CONMODE	CONVERS	CONVERS	CONVERS	CONVERS
CONOK	ON	ON	ON	ON
CPACTIME	OFF	OFF	OFF	OFF
CR	ON	ON	ON	ON
CRSUP	OFF	OFF	OFF	OFF
CSTAMP	OFF	OFF	OFF	OFF
<b>CTEXT</b>	<b>(See Guidelines, Technical, Paragraph 6)</b>			
CWID	EVERY 0 (disabled)	EVERY 0 (disabled)	EVERY 0 (disabled)	EVERY 0 (disabled)
<b>CWIDTEXT</b>	<b>Blank this field to save memory</b>			
<b>DAYTIME</b>	<b>Set to Local Time and Date</b>			
DAYTWEAK	8	8	8	8
DAYUSA	N/A	N/A	ON	ON
DAYSTR	mm/dd/yy hh:mm:ss	mm/dd/yy hh:mm:ss	N/A	N/A
DBLDISC	OFF	OFF	OFF	OFF
DELETE	\$08 (CTRL-H)	\$08 (CTRL-H)	\$08 (CTRL-H)	\$08
DIGIPEAT	ON	ON	ON	<b>ON</b>
<b>DWAIT</b>	<b>16 (160 msec)</b>	<b>16 (160 msec)</b>	<b>16</b>	<b>16</b>
ECHO	ON	ON	ON	ON
ESCAPE	OFF	OFF	OFF	N/A
FLOW	ON	ON	ON	ON
<b>FILTER</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>
FRACK	4 (4 sec)	4 (4 sec)	4 (4 sec)	4 (4 sec)
FULLDUP	OFF	OFF	OFF	OFF
GPSHEAD	The GPS Parameters do not apply to operation in the D.A.R.E.N. System.			
1	\$GPGGA	N/A	N/A	N/A
2		N/A	N/A	N/A
3		N/A	N/A	N/A
4		N/A	N/A	N/A

Parameter	KPC-3 V6.0	KPC-3 V5.1	KPC-3 V5.0	KPC-2 V5.0
GPSINIT		N/A	N/A	N/A
HBAUD	1200	1200	1200	1200
HEADERLN	ON	ON	ON	ON
HF	N/A	N/A	N/A	OFF
HID	ON	ON	ON	ON
HTEXT			N/A	N/A
<b>INTERFACE</b>	<b>TERMINAL</b>	<b>TERMINAL</b>	<b>TERMINAL</b>	<b>TERMINAL</b>
KNTIMER	15 min	15 min	15	15
LEDS	ON	ON	ON	N/A
LCOK	ON	ON	ON	ON
LCSTREAM	ON	ON	ON	ON
LFADD	OFF	OFF	OFF	OFF
LFSUP	OFF	OFF	OFF	OFF
LLIST	OFF	OFF	OFF	OFF
LT	The LT Parameters do not apply to the D.A.R.E.N. System		N/A	N/A
1			N/A	N/A
2			N/A	N/A
3			N/A	N/A
4			N/A	N/A
LTP			N/A	N/A
1 GPS	The GPS Parameters do not apply to the D.A.R.E.N. System		N/A	N/A
2 GPS			N/A	N/A
3 GPS			N/A	N/A
4 GPS			N/A	N/A
LTRACK	0	N/A	N/A	N/A
<b>MONITOR</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>
<b>MALL</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>
MAXFRAME	4	4	4	4
<b>MAXUSERS</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
MBEACON	ON	ON	ON	ON
MCON	OFF	OFF	OFF	OFF
MCOM	ON	ON	ON	ON
MRESP	ON	ON	OFF	OFF
MRPT	ON	ON	OFF	OFF
MSTAMP	OFF	OFF	OFF	OFF
MXMIT	ON	ON	N/A	N/A
<b>MYCALL</b>	<b>(Set to the station Callsign-7)</b>			
<b>MYALIAS</b>	<b>(Set to first four letters of county)WV. (See Appendix A)</b>			
<b>MYNODE</b>	<b>(Set to first four letters of county)WV. (See Appendix A)</b>			
<b>MYPBBS</b>	<b>(Set to four letter abbreviation of city in or near location)WV. (See Appendix A)</b>			
<b>MYREMOTE</b>	<b>(SYSOP Call; See RTEXT below)</b>			
NDWILD	OFF	OFF	OFF	OFF
NEWMODE	ON	ON	ON	ON
NOMODE	OFF	OFF	OFF	OFF
<b>NTEXT</b>	<b>(See Guidelines, Technical, Paragraph 7)</b>			
NUCR	0	0	0	0
NULF	0	0	0	0
<b>NUMNODES</b>	<b>(Set low profile NODES to 4, -- see Memory usage page 12 for setting high profile NODES)</b>			
PACLEN	128	128	128	128
PACTIME	AFTER 10 (1000 msec)	AFTER 10 (1000 msec)	AFTER 10	AFTER 10
PARITY	NONE	NONE	NONE	4
PASS	\$16 (CTRL-V)	\$16 (CTRL-V)	\$16 (CTRL-V)	\$16
PASSALL	OFF	OFF	OFF	OFF
<b>PBBS</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>
PBFORWRD	NONE EVERY 0 (disabled)	NONE EVERY 0 (disabled)	N/A	N/A
<b>PBHEADER</b>	<b>ON</b>	<b>ON</b>	<b>OFF</b>	<b>OFF</b>
<b>PBHOLD</b>	<b>OFF</b>	<b>OFF</b>	<b>N/A</b>	<b>N/A</b>
PBKILLFW	ON	ON	N/A	N/A
PBLO	NEW VARIABLE	NEW VARIABLE	NEW VARIABLE	NEW VARIABLE
PBPERSON	OFF	OFF	OFF	OFF
<b>PBREVERS</b>	<b>OFF</b>	<b>OFF</b>	<b>N/A</b>	<b>N/A</b>
PERSIST	63 (25%)	63 (25%)	63	63

Parameter	KPC-3 V6.0	KPC-3 V5.1	KPC-3 V5.0	KPC-2 V5.0
PID	OFF	OFF	OFF	OFF
PMODE	CMD	N/A	N/A	N/A
<b>PTEXT</b>	<b>(See Guidelines, Technical, Paragraph 8)</b>			
REDISPLA	\$12 (CTRL-R)	\$12 (CTRL-R)	\$12 (CTRL-R)	\$12
RELINK	OFF	OFF	OFF	OFF
RESPTIME	5 (500 msec)	5 (500 msec)	5	5
RETRY	10	10	10	10
RING	ON	ON	ON	ON
RNRTIME	0 (disabled)	0 (disabled)	0	0
<b>RTEXT</b>	<b>(SYSOP set to password for remote access to TNC)</b>			
SCREENL	0	0	0	0
SENDPAC	\$0D (CTRL-M)	\$0D (CTRL-M)	\$0D (CTRL-M)	\$0D
SLOTTIME	10 (100 msec)	10 (100 msec)	10	10
START	\$11 (CTRL-Q)	\$11 (CTRL-Q)	\$11 (CTRL-Q)	\$11
STATSHRT	ON	ON	ON	ON
STOP	\$13 (CTRL-S)	\$13 (CTRL-S)	\$13 (CTRL-S)	\$13
STREAMSW	\$7C (I)	\$7C (I)	\$7C (I)	\$7C
STREAMCA	OFF	OFF	OFF	OFF
STREAMEV	OFF	OFF	OFF	OFF
SUPLIST	OFF	OFF	OFF	OFF
SUPCALLS	NONE	NONE	NONE	NONE
SWP	17,17,108	17,17,108	17,17,108	17,17,108
TRACE	OFF	OFF	OFF	OFF
TRFLOW	OFF	OFF	OFF	OFF
TRIES	10	10	10	10
TXDELAY	35 (350 msec)	35 (350 msec)	35	35
TXFLOW	OFF	OFF	OFF	OFF
UNPROTO	CQ	CQ	CQ	CQ
<b>USERS</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
XFLOW	ON	ON	ON	ON
XMITOK	ON	ON	ON	ON
XOFF	\$13 (CTRL-S)	\$13 (CTRL-S)	\$13 (CTRL-S)	\$13
XON	\$11 (CTRL-Q)	\$11 (CTRL-Q)	\$11 (CTRL-Q)	\$11

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