

KPC-3

Manual Addendum

Version 5.1 EPROM Upgrade

Kantronics

July 16, 1993

Dear KPC-3 Owner:

Congratulations on your decision to update your KPC-3 to the latest version of the firmware. The changes we've incorporated in this release are a direct result of the many requests from you, our valued customers.

Enclosed you'll find installation instructions and an addendum for your manual. The majority of additions in version 5.1 affect your KPC-3 mailbox, hence you may find it useful to review the PBBS section of your KPC-3 reference manual before installing the EPROM.

In summary, the features of version 5.1 are:

- Forwarding of messages from PBBS with Reverse Forwarding
- Monitoring of transmitted data
- PBBS log (PHEARD)
- Hierarchical address setting
- Read messages without R: lines
- Daystr command that allows you to format your date/time display
- Increased KA-Node capability – up to 26 KA-Nodes can be defined
- CWID settable by user

With this enhanced firmware, your KPC-3 can initiate a forward to another BBS and can even request a reverse forward when it finishes. Messages stored in your PBBS will receive the R: line from your PBBS showing the Date/Time received.

When you read messages with the normal R # command, the KPC-3 will not display those R: lines, but instead will display a short PATH: line, indicating the most recent BBSs that have handled this message. If you want to read the full routing, use the RH # command to read the message with all the headers displayed.

The new HTEXT command allows you to set your Hierarchical address. This is used whenever your PBBS forwards mail to another BBS to provide complete return addressing capability. Other new PBBS additions include the ability to select whether or not to kill private and traffic messages after they have been forwarded, and whether or not to HOLD messages received over the radio.

The PHEARD command will show you the callsigns of stations recently connecting to your mailbox along with their start and stop times.

The DAYSTR command allows you to customize the format of your Date/Time display. This command replaces the DAYUSA command, but provides much more flexibility in your display format.

Installation Instructions

Follow the steps listed below to install your version 5.1 update in the KPC-3. Note that when you install the new EPROM, your KPC-3 will have to be reprogrammed with your parameters. You may wish to print your current settings or save them to disk before installing the update.

1. Disconnect the cables from the rear of the KPC-3 and be sure the unit is turned off.
2. Remove the two screws from the sides of the KPC-3 case and remove the top cover.
3. Carefully remove the version 5.0 EPROM from socket U-10.
4. Install the version 5.1 EPROM in socket U-10, making sure you have the notch on the new EPROM facing the left of the KPC-3 as you look at it from the front.
5. If you also purchased the 128K RAM or the Real-Time Clock option, install these as described on pages 110 and 111 of the KPC-3 reference manual.
6. Replace the top cover and screws, and reconnect the KPC-3 to your station equipment.
7. Remember that the KPC-3 will need to be reprogrammed, so when you first turn it on, it will perform its autobaud routine. The INTFACE command will again be set to NEWUSER, so you will probably want to set INTFACE TERMINAL as one of your first commands after entering your callsign.

New Commands

● CWIDText text (0-15 characters)

v5.1

default DE mycall

This command sets the text to be transmitted when the KPC-3 performs an automatic CWID. The text will be transmitted periodically as set by the CWID command.

See also: cwid

● DAYStr dayform

v5.1

default mm/dd/yy hh:mm:ss

The DAYSTR command is used to set the FORMAT of your date/time display. DO NOT enter an actual date or time, simply enter the form of the display you would like, using the lower case letters m, d, h, y, and s as described below.

The format you enter is used for all time stamps, including the PBBS, KA-Node, Mheard list, etc. The lower case characters m, d, y, h, and s have special meaning to this command and will be replaced with data from the software clock. The lower case m will be replaced with the minutes the first time it appears after a lower case h. If h, m, y, d, or s is specified as a single character, the corresponding date/time element will be displayed as a single digit if the value is less than 10. Entering two characters will force a two digit display for values under 10. If the month is entered as three m's, it will be displayed as the first three characters of the month name (JUL). You may also enter any other text you wish, allowing you to add such things as your time zone. Remember ALL lower case m, d, y, h, and s will be replaced by actual values.

Some examples of setting the DAYSTR command and the resulting time/date display are:

DAYSTR setting	Displayed Date/Time
mm/dd/yy hh:mm:ss	07/16/93 12:14:22
d.m.y h:mm:ss	16.7.93 12:14:22
d.mm.yy h:mm	16.07.93 12:14
mmm d 19yy h:mm CST	JUL 7 1993 12:14 CST
TIME hh:mm DATE: mmm dd, 19yy	TIME 12:14 DATE JUL 07, 1993

CAUTION: If you enter an actual date/time with the DAYSTR command, your clock will appear to stop. Do NOT enter a real date/time using this command.

See also: daytime

● HText text

v5.1

default blank

The HTEXT command is used by your PBBS to provide hierarchical routing information. Use this command to enter the hierarchical portion of your packet address. Do not enter your callsign or the first period of your packet address.

A hierarchical address consists of your state, country, and continent codes, separated by periods. Some areas (in large states particularly) use sub-state designators. For instance, a station in Rhode Island might use a hierarchical address of RI.USA.NA. This means Rhode Island (RI) which is in the United States (USA) which is in North America (NA). In this case, you should set the HTEXT to RI.USA.NA

If you are unsure of your hierarchical address, contact your local packet BBS sysop and ask what the proper addressing is for your location.

Note: Your PBBS will not forward or reverse forward unless HTEXT is set.

● **MXmit ON|OFF**

v5.1

default ON

When ON, the KPC-3 will display transmitted packets as monitored data on your terminal. Repeated packets will be displayed as they are sent over the radio. The frames to be displayed will be controlled by the MONITOR, MCOM, MCON, and MRESP commands, and will obey the settings of TRACE, MSTAMP, HEADERLN, 8BITCONV and FILTER commands.

See also: monitor

● **PBForwrd bbscall [VIA call1,call2,...call8] [EVERY|AFTER n]**

v5.1

default NONE EVERY 0

This command will cause your PBBS to attempt to initiate a forward of any eligible mail to another BBS system periodically. Any message in your PBBS which contains an @BBS field and is not being HELD (H) or has not previously been FORWARDED (F) is eligible for forwarding. If the keyword EVERY is used, the PBBS will attempt to forward once every n hours. If you specify the keyword AFTER, the PBBS will attempt to forward whenever a user disconnects from the PBBS, and every n hours after that. Setting the time interval will cause the PBBS to attempt to forward immediately.

After the PBBS has initiated a forward, it will also request a reverse forward if PBREVERS is ON. Note that full-service BBS systems must be configured to allow your station to reverse forward mail to you.

Note: Your PBBS will not forward or reverse forward unless HTEXT is set.

See also: pbrevers

● **PBHold ON|OFF**

v5.1

default ON

When ON, any message received over the radio will automatically be held by your PBBS for you to review. You may then release the message for forwarding by editing it and change the H flag (for example, to edit message number 4: E 4 H). When OFF, messages received over the radio are not held, but may immediately be forwarded from your PBBS. (Note that any message addressed TO or @ your MYCALL or MYPBBS call will be held regardless of the setting of PBHOLD.)

● **PBKilfw ON|OFF**

v5.1

default OFF

When OFF, Private and Traffic messages will not be deleted (killed) from your PBBS after they have been forwarded, but will be marked with an F flag (forwarded). When ON, Private and Traffic messages will be deleted from the PBBS after they have been successfully forwarded.

● **PBRevers ON|OFF**

v5.1

default ON

When ON, the KPC-3 PBBS will request a reverse forward from another BBS after it has finished forwarding any mail to the other BBS. This does not affect the ability of another BBS to reverse forward from your PBBS, but only affects the action taken by the KPC-3 after it has initiated a forward (PBFORWRD command).

Note: Your PBBS will not forward or reverse forward unless HTEXT is set.

See also: pbforwrd

● **PHClear**

immediate

This command will clear the list of stations who have connected to the PBBS.

See also: pheard

● **PHeard**

immediate

This command will display a list of stations that have recently connected to your KPC-3 PBBS. The list will show the callsign of the connecting station and the time they connected and disconnected.

See also: phclear

Manual Changes

With version 5.1 for your KPC-3, ten new commands have been added, one command has been deleted, and the operation of the PBBS Read command has changed slightly.

The DAYUSA command has been deleted from the KPC-3 (page 20, reference manual). You may now use the DAYSTR command to set the format for your date/time display.

The NUMNODES command (page 35, reference manual) will now permit a maximum value of 26, depending on the amount of RAM installed in your KPC-3. With the standard 32K RAM, you may be able to set up to 6 nodes, but with 128K RAM, you can set NUMNODES up to 26 (depending on PBBS and other settings).

The READ command in the PBBS has been modified slightly, and a new variation of the READ command has been added. When you read a message in the PBBS with the R command (e.g. R 27) the KPC-3 will convert the R: lines in the file into a PATH statement, showing the BBSs that have forwarded this message. The most recent 9 BBS stations will be shown in a line beginning with the word PATH:, and if more than 9 stations have forwarded this message the PATH line will end with three dots (...).

The PBBS now allows you to read messages with the RH command (read with headers). This command will display the entire contents of the message including the R: lines, allowing you to see the date/time that the message was received at each forwarding BBS along the path to your station.

For further details on PBBS use see the KPC-3 reference manual, pages 62-72.

Note: Your PBBS will not forward or reverse forward unless HTEXT is set.

Kantronics PBBS

Your Kantronics TNC includes a Personal Bulletin Board System (PBBS) which is capable of storing and forwarding messages for you and other users. This PBBS provides the same message facilities as a computer based BBS (normally referred to as a full-service BBS), including the forwarding of Bulletins, Private mail, and NTS traffic.

Before explaining details of your Kantronics PBBS, it is important that you understand the basics of a full-service BBS system. Each user should select one (and only one) full-service BBS that will normally be used to send and receive mail. This BBS is then called your "HOME BBS" and should not be changed unless you move to a new location. When you connect to your home bulletin board system and list the messages (using the L command), you will see a list containing information about each message on the system. A recent list of messages on one local system might look like this:

Msg #	TSL	Size	To	@ BBS	From	Date/Time	Subject
=====	===	=====	=====	=====	=====	====/====	=====
59765	B\$	1491	NASA	@ALLUS	N5IST	1004/1529	GALILEO STATUS 09/30/93
59764	BNL	468	WX		NONEJ	1012/1017	KC Forcast 10/12 400am
59763	BNL	659	WX		NONEJ	1012/1017	MO Forcast 10/12 400am
59759	B\$	2240	NASA	@ALLUS	N5IST	1004/1529	MARS OBSERVER STATUS 9/27/93
59758	B\$	1642	NASA	@ALLUS	N5IST	1004/1529	MARS OBSERVER STATUS 9/22/93

This list shows the message number, type and status information, size of the message, the addressee (TO field), distribution (@BBS field) and originator (FROM field). In addition the list shows the date and time the message was received at this BBS and a short subject for the message.

Under current FCC requirements, BBS systems that can store and forward messages without an operator being present must have the capability to provide a record of the path the message has taken from its origination. To accomplish this, BBSs include a **routing line**, beginning with R:. This R: line includes the date/time the message was received, message number, BBS call and hierarchical routing information.

When you read a message using the R command (e.g. R 59765) you see the header displayed. For example:

```
From      : N5IST
To        : NASA @ALLUS
Type/status : B$
Date/time  : 04-Oct 15:29
Bid       : NASA0930.GAL
Message #  : 59765
Title     : GALILEO STATUS 09/30/93
Path:     : !WK5M!NOLLY!N0OER!N0OEM!NXOR!AGON!N7MMC!KTOH!KAOWIN!N5IST!
```

The Path: statement in the header lists the most recent BBS systems that have been used to relay this message from its origin to the BBS you read it from. This path information is required by the FCC to allow them complete traceability for any message in the system. What you see in the PATH statement is not the complete information on the routing, but simply a summary of the systems that have handled the message. To see the complete information, BBS systems allow a second version of the READ command (RH or V) that will display more routing information. A routing list from a recent bulletin appears below.

```
R:931012/1107 27268@WK5M.#NEKS.KS.USA.NOAM
R:931012/1025 16433@NOLLY.#NEKS.KS.USA.NOAM
R:931011/2021 928@N0OER.#NEKS.KS.USA.NOAM
R:931008/1814 20728@N0OEM.#NCKS.KS.USA.NOAM
R:931008/2003 19520@NXOR.#NKS.KS.USA.NOAM
R:931008/1153 30798@AGON.#WNE.NE.USA.NOAM
R:931007/1147 35850@N7MMC.#SEWY.WY.USA.NOAM
R:931007/1712 49403@KTOH.#NECO.CO.USA.NOAM
R:931007/1639 63792@KAOWIN.#SECO.CO.USA.NOAM
R:931004/1529 46383@N5IST.#WTX.TX.USA.NOAM
```

By examining this list from the bottom up, we may see that the message entered the system on October 4, 1993 at 15:29 (R:931004/1529). It was message number 46383 on the N5IST BBS (@N5IST) which is located in West Texas (#WTX), which is in Texas (TX), which is in the United States (USA) which is in North America (NOAM).

From this station, it was relayed on October 7 at 16:39 to the KA0WIN BBS in Southeastern Colorado. By following this information it is possible to determine where the message traveled and when it was relayed from each station. The information following the @BBS callsign is called the **hierarchical routing information** (in this case #WTX.TX.USA.NOAM).

When you connect to your local BBS and send a message, that BBS automatically generates this R: line. As the message is sent to its destination, each BBS adds its own R: line to the message. Besides the requirement of the FCC, the R: line provides a method for any user, anywhere in the world, to send a reply or respond to your message. As the message is passed through the many BBSs, each BBS will add you into its White Pages – a directory of packet users. Each BBS makes note that you (the originator of the message) sent the message, and that you entered the message at the BBS listed in the last R: line in the message.

Because of this, a distant user can simply send a reply using the send reply (SR) command of his local BBS. That BBS will then address the message to you using the @BBS and hierarchical routing information in the last R: line of the message you sent. A user may also simply use the send private command (SP) to send a message to you. If the user does not enter complete addressing on his SP command, the BBS will attempt to look up your call in its White Pages and add the routing automatically. However, if the user supplied complete addressing information, the BBS would normally assume it is correct and not check the White Pages.

BBSs use this hierarchical information to send the message back to you. The message someone sent to you (using the above example) would be addressed to URCALL @ N5IST.#WTX.TX.USA.NOAM. As the message passes through the BBS system for forwarding, the BBS first looks at the callsign of the addressee (URCALL). If that BBS doesn't know how to forward the message to you, it then looks at the @BBS field (N5IST). If it doesn't have any information on how to forward to N5IST, it looks at the first part of the hierarchical address (#WTX), not knowing that, it would then look at the next part of the hierarchical address (TX). Assuming this BBS is in the United States, it knows TX means Texas and knows that this message needs to be relayed to a station in that area.

Once the message reaches the first BBS in Texas, that system must use the previous field for forwarding (#WTX). Once it reaches a system in West Texas, the forwarding occurs based on the @BBS.

When the message reaches the BBS specified in the @BBS field, it can forward the message directly to you, since you are using that system as your HOME BBS.

When you enter a message into your Kantronics PBBS and supply the routing information, that message may be forwarded automatically to another BBS. When the message is forwarded from your Kantronics mailbox, an R: line is included as the originating BBS. This line includes the same information as any other BBS. This R: line consists of the date/time the message was entered into your PBBS, the message number, your MYCALL (URCALL) and the HTEXT you have set. For instance, your R: line might be:

```
R:931008/1255 23@URCALL.#WTX.TX.USA.NOAM
```

Some BBS operator groups are insisting that your system is NOT a BBS, and therefore should not include R: lines. Their reasoning is that in the above example, EVERY BBS in West Texas would have to know how to send messages to your callsign – not just to your HOME BBS. One solution to this is to include the callsign of your HOME BBS as part of your HTEXT. This would change your R: line to:

```
R:931008/1255 23@URCALL.N5IST.#WTX.TX.USA.NOAM
```

As this forwards through the system, all West Texas BBSs can still forward the message to N5IST because his call is a part of the hierarchical routing.

As of this writing, there seem to be at least two groups with strong opinions on the use of, or prohibition of, R: lines by TNC based PBBSs. Some think the volunteer BBS network may be overloaded by personal boards including the R: lines; others insist that the R: lines are required by regulations. We suggest you adapt to "local custom" by turning the R: line feature ON or OFF accordingly.

If your local SYSOP demands that you not add R: lines to your messages, you must set the PPERSON command ON. This will limit your PBBS to receiving messages addressed ONLY to your MYCALL or your MYPBBS call. In addition, your PBBS will only forward messages from YOU (no third-party messages) and will not add the R: line to the routing.