

Winkeyer IC Version 3.0 Changes

Winkeyer Release version 30 (3.0) has a considerable number of changes and improvements which are covered in this section. There are two sections; the first will cover functional changes to standalone keyer mode. The second section will cover changes that affect host operation.

Section One: Standalone Mode Changes (No host mode implications)

- 1) **Added Extended Commands:** Commands that are not used very often were moved to an extended command set. This allowed several new direct command to be added as well as many new commands in the extended list.
- 2) **Supply Voltage Monitoring: WK3** has a unique feature that is especially useful in battery powered applications. It is able to accurately monitor its supply voltage and provide an indication when battery voltage is low. Normally the K14 will respond with an **R** when entering command mode. If the battery voltage is approaching the minimum operating range, it will respond with an **L** instead. This tells the operator that the batteries need to be replaced. The actual supply voltage can be read out in Morse by using the **V** command in the extended command set. See page 11.
- 3) **Dual User Configuration:** WK3 provides space for two complete configuration setups. For example, one setup could be used for contesting while the other for casual operating. Or, when two operators share the same keyer, each one can tailor the keyer to their taste and store separate profiles. The extended command **U** is provided to select one configuration or the other. All WK3 settings are included in each profile including a stored callsign
- 4) **Stored Callsigns:** A special memory slot is provided to store the operator's callsign. In fact there are two callsign slots provided, one for each user. The callsign is programmed by using a special callsign load command in the extended command set. The callsign can be embedded in a message with the **/M** buffered command. The callsign slot works like any other message slot, you can call other messages, embed commands, and there is no practical limit to the length of the string.
- 5) **Dual Message Banks:**
WK3 has two message banks of six slots each for a total of 12 slots not including two callsign slots. While this does not seem like a lot of messages, due to WK3's dynamic memory allocation scheme, it turns out to be more than adequate for most users. It is very easy to swap message banks with the **E** command. This is the shortest command sequence and allows you to swap banks quickly. There is also a buffered message command that swaps message banks.
- 6) **Sidetone Frequency:** In the WK2, only a handful of sidetone frequencies could be selected. WK3 allows practically any frequency between 500 Hz and 2000Hz.
- 7) **Fast Message Interruption:** WK3 waited until a letter was complete before checking for an abort request. The K14 will stop a message immediately upon paddle press, stopping in mid-letter if need be.
- 8) **Practice Mode:** Both send and receive practice are included. The user can select practice content by letter group so that easy letters can be mastered first followed by progressively more difficult groups. A very good random letter generator is provided which generates varied, ever changing letter order.
- 9) **Message Stacking:** Up to 10 messages can be queued to be sent in the order requested. The number of nested called messages has been increased as well.
- 10) **Simplified Beacon Formatting:** In WK3, a **/Jn** command had to be placed at the end of a beacon string in order for the beacon to repeat. WK3 does not require this extra jump command as it is inferred. A WK3 style beacon message looks like this:

/B15 K1EL BCON/J1 can now be formatted as: **/B15 K1EL BCON**
- 11) **Improved Cut Number Selection: WK3** allows serial number cuts to be used for 0, 9, both, or neither.

- 12) **Tuning Duty Cycle Selection:** Tune can be set to generate either a 50% or 100% key down duty cycle.
- 13) **Fixed Speed Setting:** WK3 supports both a variable speed control and a fixed “favorite” speed setting. It is very easy to switch between them. The fixed speed setting is set by the **S** command.
- 14) **Paddle Serial Number Decrement:** A fast way to decrement the serial number is very useful during contests. The K14 allows this with a simultaneous command pushbutton and paddle press.
- 15) **Command Response Time Adjustment:** The K14 will enter command mode when the command pushbutton is pressed for about 2 seconds. This may be too long for some operators. A new extended command **F** has been added that allows the delay to be shortened to about 1.3 seconds.

Section Two: Changes that affect Host Mode

This section describes changes that have an effect on host mode operation. All of these commands also apply to standalone mode.

- 1) **Added Voltage Readback command:** The host can now read back the operating voltage of WKUSB
- 2) **Added In Field Firmware Update:** Users can now install the latest WK firmware without having to change the WK IC.
- 3) **Continuously Variable Sidetone:** Set frequency between 500 and 2000 Hz
- 4) **Changes to X1MODE register, New X2MODE Register:** New bit locations, new functions.
- 5) WK 3.0 accepts the
- 6) **New ADMIN commands summary:**

ADMIN CMD	Function	Parameter
0x20	Set WK3 Mode	none
0x21	Return Voltage	none
0x22	Load X2MODE Reg	X2MODE byte value

Versions Compared

Winkey 1 v10

0 MODEREG
1 OPRRATE (0 = potlock)
2 STCONST
3 WEIGHT
4 LEAD
5 TAIL
6 MINWPM
7 WPMRANGE
8 1stXTND
9 KCOMP
A FARNS
B SAMPADJ
C RATIO
D PINCFG
E POTRANGE
F N/A

MODEREG

7 NONSTICK: Paddle WDOG
6 MORSEBACK: Paddle Echo
5 NIAMBIC: Not Iambic
4 KEYERMODE: NO:B/A 1:U/BUG
3 SWAP: Swap paddles
2 ECHO: Serial Echo
1 ASP: Autospace
0 CTSPACE Contest space

PINCFG

7 DITPRI: Ultim Dit priority
6 DAHPRI: Ultim Dah priority
5 HANG1: PTT hang
4 HANG0: adjustment
3 KEYPORT1: Use Key port 1
2 KEYPORT0: Use Key port 0
1 USETONE: Sidetone on
0 USEPTT: PTT on

STCONST

15 values 0x1 to 0xA

SAMPADJ

Set = 0 to disable latches

Winkey 2 v23

0 MODEREG
1 OPRRATE (0 = potlock)
2 STCONST
3 WEIGHT
4 LEAD
5 TAIL
6 MINWPM
7 WPMRANGE
8 1stXTND
9 KCOMP
A FARNS
B SAMPADJ
C RATIO
D PINCFG
E X1MODE
F CMDWPM

MODEREG

7 NONSTICK: Paddle WDOG
6 MORSEBACK: Paddle Echo
5 NIAMBIC: Not Iambic
4 KEYERMODE: NI=0:B/A 1:U/BUG
3 SWAP: Swap paddles
2 ECHO: Serial Echo
1 ASP: Autospace
0 CTSPACE Contest space

PINCFG

7 DITPRI: Ultim Dit priority
6 DAHPRI: Ultim Dah priority
5 HANG1: PTT hang
4 HANG0: adjustment
3 KEYPORT0: Use Key port 0
2 KEYPORT1: Use Key port 1
1 USETONE: Sidetone on
0 USEPTT: PTT on

X1MODE

7 LSADJ3: Letterspace
6 LSADJ2:
5 LSADJ1:
4 LSADJ0: Adjustment
3 SN_0_9: 0 and 9 cut enable
2 XMSARE1
1 PDLSTAT: Paddle Status On
0 XMSPARE0

STCONST

15 values 0x1 to 0xA
MSB = PDLST (paddle only ST)

SAMPADJ

Set = 0 to disable latches

Winkey 3 v30

0 MODEREG
1 FAVEWPM (0 = potlock)
2 STCONST
3 WEIGHT
4 LEAD
5 TAIL
6 MINWPM
7 WPMRANGE
8 X2MODE
9 KCOMP
A FARNS
B SAMPADJ
C RATIO
D PINCFG
E X1MODE
F CMDWPM

MODEREG

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PINCFG

7 DITPRI: Ultim Dit priority
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3 KEYPORT0: Use Key port 0
2 KEYPORT1: Use Key port 1
1 USETONE: Sidetone on
0 USEPTT: PTT on

X1MODE

7 USER: User 0 or 1
6 MSGBANK: Message Bank 0/1
5 TUNE_50: 50/100% Tune Duty
4 LSADJ4: Letterspace
3 LSADJ3:
2 LSADJ2:
1 LSADJ1:
0 LSADJ0: Adjustment

X2MODE

7 PDLSTAT: Paddle Status On
6 FASTCMD: Fast cmd response
5 CUT_9: Substitute N for 9
4 CUT_0: Substitute T for 0
3 PDLSTONE: Paddle sidetone
2 SO2RMODE: PTT1 = select
1 PDLMUTE: Paddle mute
0 SPARE

STCONST

Value ranges from 30 to 165

SAMPADJ

Set = 0 to disable latches

Winkey 1 v10

```
WKSTAT MSBits = 110sssss
4 TIMEWAIT: Timer wait
3 WKTUNE: Tune Status
2 KBUSY: Keyer busy
1 BREAKIN: Paddle break in
0 XOFF: Serial XOFF
```

Winkey 2 v23

```
WKSTAT MSBits = 110sssss
4 TIMEWAIT: Timer wait
3 WKTUNE: Tune WK1 mode
2 KBUSY: Keyer busy
1 BREAKIN: Pdl break in
0 XOFF: Serial XOFF
```

```
if (WK2MODE && !PDLSTAT &&
    WKPUSHB)
```

```
4 PB4STAT: PB 4 status
3 WKPUSHB (see above)
2 PB3STAT: PB 3 status
1 PB2STAT: PB 2 status
0 PB1STAT: PB 1 status
```

```
if (WK2MODE && PDLSTAT &&
    PB4STAT && WKPUSHB &&
    PB3STAT)
```

```
4 PB4STAT (see above)
3 WKPUSHB (see above)
2 PB3STAT (see above)
1 Set to 1 if Dah pressed
0 Set to 1 if Dit pressed
```

Winkey 3 v30

```
WKSTAT MSBits = 110sssss
4 TIMEWAIT: Timer wait
3 WKTUNE: Tune WK1 mode
2 KBUSY: Keyer busy
1 BREAKIN: Pdl break in
0 XOFF: Serial XOFF
```

```
if (WK2MODE && !PDLSTAT &&
    WKPUSHB)
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```
4 PB4STAT: PB 4 status
3 WKPUSHB (see above)
2 PB3STAT: PB 3 status
1 PB2STAT: PB 2 status
0 PB1STAT: PB 1 status
```

```
if (WK2MODE && PDLSTAT &&
    PB4STAT && WKPUSHB &&
    PB3STAT)
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```
4 PB4STAT (see above)
3 WKPUSHB (see above)
2 PB3STAT (see above)
1 Set to 1 if Dah pressed
0 Set to 1 if Dit pressed
```