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TO:       Bill Henry
          Configuration Manager
FROM:     A.B. White
SUBJECT:  ST-8000A FIRMWARE REVISIONS
DATE:     February 6, 1992
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ST-8000A FIRMWARE UPDATE
Version:   2.0
Released:  2-6-92
Checksum:  9200

Source:    CF880-80620
EPROM:     675-80620
```

1. In previous versions, the BIT fails when TX MUTE is ON. The problem was
caused by the functions that BIT called to set TX MARK and TX SPACE. Both
routines tested for MUTE, and would not update the tone synthesizer registers
when MUTE was ON. In V2.0, two new functions were added to set TX MARK and
TX SPACE without testing for MUTE. Now, the BIT uses these new functions, and
the BIT passes even when MUTE is ON.

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ST-8000A FIRMWARE UPDATE
Version:   1.9
Released:  7-29-91
Checksum:  B700

Source:    CF880-80619
EPROM:     675-80619
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1.   Add the test number to the CHAN display when the loop test fails.
Previously, the routine did not refresh this number after performing an init
when the test failed. The FAIL would flash, but no test number was displayed.
Now, the test number is generated when the FAIL is displayed.

2. The P1/P2 command did not update the front panel if the hidden channel
were copied into the channel displayed on the front panel. Now the
MARK/SPACE, BAUD, and LED's are updated when the copy is performed.

ST-8000A FIRMWARE UPDATE
Version: 1.8
Released: 3-20-91
Checksum: D900

1. Added a repeated BIT test option to the test modes. From the remote port,
T8 starts the test and from the keypad 2nd-BIT-8 starts the test. T0 or the
CLEAR key will terminate the test. When in repeated BIT test mode, the EEPROM
test is skipped so that we do not age the EEPROM prematurely.

2. Modified Help pages 2 and 3 to include the repeated BIT test mode

3. Changed the BIT test so that it uses the upper RAM area instead of the
EEPROM for variable storage.

4. The E0/E1 and 0.5 key option was not set per channel and was not stored.
This is now a flag that remains enabled until it is turned OFF. It remains
in effect for all remote port and front panel entries.

5. The REGEN port interrupt is disabled when the regen mode is not active.
This will have no effect on the unit operation.

ST-8000A FIRMWARE UPDATE
Version: 1.7
Released: 2-23-91
Checksum: 3B00

1. Change the TX MUTE control so that it turns OFF the tones always, even
when the TONES ON is selected. This control now clears the latches in the
transmit tone synthesizer so that no tone is transmitted. During T2, T3, and
T4 the keyline and tones are turned ON, then the latches are cleared if the
TX MUTE is active when the test is done.

2. The RTS state variable is set to a special test mode when T2, T3, and T4
is active. In this way, changes in data or RTS will not cause the output to
turn OFF.

ST-8000A FIRMWARE UPDATE
Version: 1.6
Released: 2-22-91
Checksum: 6E00

1. Fix the problem with a double length keyline delay if characters arrive
when RTS is ON.

2.   Add a new remote port command Q to select MARK/SPACE or CENTER/SHIFT
display mode on the front panel. Help page L2 is changed to add this new
command.

3. Add power on default init. Press CLEAR during power on display.

4. Add P0 command to reset to factory defaults settings.

5.   Add new variable in the memory save area to make certain that the data
stored there is the correct date. The new flag is stored at CONFIG_SAVE and
it is 1 word long.

6. Changed the TX MUTE operation so that the tones and PTT work as the 1280A
works.   That is, keyline is always active and the tones are completely
disabled when MUTE is ON.

7.   Add keyline and tone ON to T2, T3, and T4 tests when activated by the
remote port or the keypad. T0 turns off keyline and tones.

ST-8000A FIRMWARE UPDATE
Version: 1.5
Released: 2-14-91
Checksum: 0100

1. This release has all of the file headers that show drawing number and
version number.   I created a new version file: STA.VER that sets the
conditional assembly flags and version number and date. All source files were
modified to include this file at the beginning.   When a new version is
released, we need only change the file numbers in the STA.VER file.

2. Copyright notice has been added at offset 0100H

ST-8000A FIRMWARE UPDATE
Version: 1.4
Released: 2-13-91
Checksum: 1800

1.   Minor changes to 2nd-BIT-CHAN so that the options and the switch indications are left justified.

2.   Change the keypad number input routine so that the 0000 is a valid entry.

3.   Allow the shift to be 0000 Hz.

4.   Minor changes to the G5 status screen so that the columns align.

ST-8000A FIRMWARE UPDATE
Version: 1.3
Released: 2-12-91
Checksum:

1.   Added the toggling ENTER LED for all keypad activated internal tests. Previously, the LED did not toggle for ECHO, REMOTE, or CHAN.

2.   Fixed the shift option so that any shift up to 2700 Hz is allowed. Previously, the shift was limited from 20 to 2000 Hz.

ST-8000A FIRMWARE UPDATE
Version: 1.2
Released: 2-10-91
Checksum: 7000

1. Changed HELP page 1 to include the actual shift ranges allowed. The first page contained an error.

ST-8000A FIRMWARE UPDATE
Version: 1.1
Released: 2-8-91
Checksum: 8100

1. All remote port and keypad activated tests changed so that the low pass
filter oscillator is set when the test is terminated. Previously, the low
pass filter would default to 75 baud on test termination.

2.   The BIT MARK changed so that it sets the NORMAL flag in hardware.
Previously, the REVERSE was set for SPACE, but NORMAL was not forced. When
activated from the remote port, T2 - T3 - T2 would leave the SPACE transmit
tone active rather than change back to MARK.

3. The BIT ALT test was changed to use the NMI interrupt routine to send the
data bits. NMI is set to 4 times the data rate, then the NMI routine counts
down a times 4 counter for each bit. The TXD NORM/REV bit is toggled each
time the count reaches 0.

4. Help page #1 was changed so that the SHIFT operation is correctly shown.
Previously, this page indicated that the SHIFT range was 300 to 3000 Hz.

ST-8000A FIRMWARE UPDATE
Version: 1.1
Released: 2-5-91
Checksum: 2C00

Initial production release.