

How to Identify 7K Main Board Versions
25 February 2006, S-COM LLC

A 7K Main Board is pre-V2.0 if:

- It has a Real-Time Clock (RTC) circuit consisting of U11 (74HC139), U12 (ICM7170), Y2 (32 kHz crystal), C22 (trimmer cap), and other parts, all located near the middle mounting screw on the side opposite the D-sub connectors
- It has a 3V lithium battery at B2 with nearby jumper "RTC" in place
- It has a 3V lithium battery at B1 with nearby jumper "MEM" in place
- It has a 32K x 8 CMOS SRAM IC at U4 (uPD43256, HY62256, etc.)
- It has a DS1210 at U3
- It has an EPROM labeled V1.xx (V1.00 through V1.17) at U5

Version 2.0 not only upgraded the firmware but also replaced the RTC circuit and the RAM battery backup circuit with a RAM/RTC/battery combination IC.

A 7K Main Board was upgraded from V1.xx to V2.xx if:

- It has an external ICM7170 RTC circuit (left over from V1.xx)
- It has a DS1644 or M48T35Y at U4
- It has no DS1210 at U3
- It has an IC socket at U3 with wire jumpers shorting pin 1 to pin 8 and pin 5 to pin 6
- It has an EPROM labeled V2.xx at U5

(The two lithium batteries may be present or may have been removed)

A 7K Main Board was manufactured after V2.xx if:

- The external RTC parts are totally missing (the silk-screened legends may still be present)
- The lithium batteries and battery jumpers are totally missing (the silk-screened legends may still be present)
- It has a DS1644 or M48T35Y at U4
- It has no socket at U3, just two wire jumpers (or one wire and one zero-ohm resistor)
- It has an EPROM labeled V2.xx at U5

Upgrading a 7K from V1.xx to V2.xx is easy!

The upgrade is as simple as swapping the old RAM and EPROM with new ones, and removing U3 and replacing it with wire jumpers. All ICs are socketed.

A low-priced upgrade kit with instructions is available from S-COM LLC. Instructions are available on the web site at <http://www.scomllc.com/resource.shtml>.

How to Identify the SSM I and SSM II

It's an SSM I if:

- It has a TSP5220 speech synthesizer at U2
- It has a 28-pin microprocessor at U1 with a ceramic body and a V1.0 label over the window
- It has a pot (R3) to adjust the pitch

It's an SSM II if:

- It has a TSP53C30 speech synthesizer at U2
- It has a 40-pin microprocessor at U1 (either a ceramic body and a V1.0 label over the window or a plastic body with no window)
- It has a trimmer cap (C24) to adjust the pitch

SSM Microprocessor Upgrades:

- The *SSM I* and *SSM II* use different factory-programmed microprocessors from the same Motorola family
- Both processors are version V1.0; neither has needed an update

SSM Vocabulary Upgrades:

- All *SSMs* have two sockets for vocabulary EPROMs, U5 and U6
- The vocabulary EPROMs are the same type for the *SSM I* and *SSM II*
- Very old *SSMs* have a single vocabulary EPROM (Vocab 1.0 at U5) and an empty socket at U6
- In newer *SSMs*, U5 is named Vocab 2.0 and is filled to capacity with words in male voice
- In newer *SSMs*, U6 is named Vocab 3.x (Vocab 3.0 has words in female voice and four sound effects; Vocab 3.1 adds more sound effects; Vocab 3.2 through 3.7 add custom words)

Upgrading an SSM is easy!

It's easy to upgrade the vocabulary at a small cost; each EPROM costs \$20, and no cold start is required.

Comparing 7K Main Board and SSM Versions

There have been many 7K Main Board and SSM upgrades over the years, and the version of one board does not necessarily indicate the version of the other. So, for best service, please have the version numbers for both boards when contacting S-COM.

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