http://biosrhythm.com/?p=1206

2 thoughts on “The Jameco JE520 Voice Synthesizer”

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Jonathan Gevaryahu

NOVEMBER 12, 2015 AT 1:59PM

I have good dumps of all 4 of the JE520 2364 mask roms; Replacing rom 2 (or 4) is a bit tricky, since those ROMs are non-JEDEC and have pin 20 (or is it pin 22 /OE? I forget) inverted as CE (or OE) instead, on just those two roms. (This may also effectively make the rom ‘look’ like it is bad when dumping it, since EPROM programmers will hold /CE and /OE low, which means the chip will read as open bus!)

The correct checksums of the 4 rom chips’ contents are:
ROM1 (U6): CRC32: 97B6281E SHA1: B81D308C88239EA5D708D9FD4474082C8AC74A29
ROM2 (U7): CRC32: 20FA796F SHA1: 058C1DD56F8E455E4F92078684C779AE020A6B32
ROM3 (U8): CRC32: 5984A509 SHA1: C80CD9078DD88E62B3BBA51797DF8D005ACD87E7
ROM4 (U9): CRC32: 56889C81 SHA1: 60929C6C73D944AB1FD249BFF4AF8240F84F357F

To replace a bad ROM 2 or 4, you will need to use a 2764 EPROM programmed with the data needed, and will need to add an inverter so the EPROM acts as if the /CE pin is inverted.
To do this, program the EPROM with the correct data, then bend pin 20 (/CE) sideways, then “dead bug wire” (i.e. mount upside-down with pins facing up in the air) a 7404 (or 74LS04) inverter on top of the 2764 EPROM with the 7404 VCC and GND wired to the EPROM VCC/GND pins (28 and 14 respectively). Then wire the 7404 pin 2 (1Y) to the pin 20 which is bent sideways, and wire 7404 pin 1 (1A) to a wire, which is stuck into the pin 20 of the socket on the pcb itself. You may also want to wire 7404 pins 3,5,9,11,and 13 to GND or VCC so the 5 unused inverters on the 7404 don’t float/oscillate weirdly.

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Wait, Did the JE520 use 24 or 28 pin 2364 mask roms?
If it used 24-pin ones, things are a bit more complicated, you will need MCM68764 or MCM68766 EPROMs to replace the bad roms then. Will still require the same dead-bug wiring circuit as listed above for roms 2 and 4, though.