14 January 1990

To: Rex Debolt
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Re: HAL P/N's for programmed EPROMS

1. UNPROGRAMMED EPROM IC's:

EPROM IC's that are <u>not programmed</u> have a HAL P/N in the "670-xxxxx" series, "670-27256" for example.

2. PROGRAMMED IC MEMORY DEVICES:

Programmed EPROM's and other firmware-containing memory IC's shall use a HAL P/N in the "675-xxxvv" series. The HAL P/N coding is:

                    Programmed Memory Device
                    HAL Product Code (ST-8000/ST-8000A)
        675 - 80 5 10
                    Sequence No. (5 = 1st ST-8000A EPROM)
                    Firmware No. (10 = V1.0)

The ST-8000A includes two 27C256-25 EPROM firmware storage devices:

    A1U36: Sine-wave synthesis EPROM   = 675-80510 (V1.0)
    A2U2: Control Board Firmware EPROM   = 675-80610 (V1.0)

Additional ST-8000A test ROM's, etc. will be assigned additional sequence numbers. For example:

    675-80710 = 1st Test EPROM (V1.0)
    675-80810 = 2nd Test EPROM (V1.0)
       etc.

The older ST-8000 (no "A") has two EPROM's, A2U10 and A2U11. The HAL P/N for programmed V1.6 parts is:

1

675-80116 = A2U10 EPROM (V1.6)
675-80216 = A2U11 EPROM (V1.6)

ST-8000 test EPROMs should be labeled as above:

675-80310 = Test Rom #1 (V1.0)
675-80410 = Test ROM #2 (V1.0)
 3. ALTERED ITEM DRAWINGS:

Note that the manufacturer's part number or ROM size are <u>not</u> included in the HAL P/N for programmed devices. Each "675-xxxvv" HAL part will require an <u>ALTERED ITEM DRAWING</u>, rather than a "Source Control Drawing" or "Specification Control Drawing". An Altered Item Drawing has the same format as a SCD but contains the following data:

The Altered Item Drawing for a programmable memory storage IC device will include the following information:

1. The HAL P/N (SCD) of the host IC (670-27256, for example).

2. A reference to the firmware "drawing number" (code listing).

3. The firmware version number including release date.

4. FIRMWARE AND SOFTWARE DRAWING NUMBERS:

Each firmware and software code will have a unique HAL "drawing number". "Firmware" is computer code whose <u>ultimate use</u> is in a memory storage IC (EPROM). "Software" is computer code whose ultimate use ia to produce a distribution diskette or other non-IC means of storage and distribution.

Note the distinction between "firmware" and "software" is determined by the intended <u>end use</u>. The HAL policy on computer code shall be that the end use determines the category and HAL P/N, <u>not</u> the intermediate means of storage or documentation.

HAL "Firmware" shall have a "drawing number" in the "880-xxxvv" series, regardless of intermediate storage media used.

HAL "Software" shall have a "drawing number" in the "885-xxxvv" series, regardless of intermediate storage media used.

For example:

ST-8000A A1U36 EPROM (V1.0):

EPROM P/N: 675-80510
FIRMWARE CODE: 870-80510

ST-8000A A2U2 EPROM (V1.0):
EPROM P/N: 675-80610
FIRMWARE CODE: 870-80610

The FIRMWARE CODE may be stored on paper (HEX listing) and/or computer diskette(s). A copy of the master diskette(s) shall be maintained by Configuration Control. All <u>HAL-generated</u> modules required to produce a given single end-item shall have the <u>same</u> HAL "drawing number" (P/N). When multiple entities are required to produce a FIRMWARE IC, all required items shall be listed on the Altered Item Drawing.
5. OTHER SOFTWARE:

Other software required to produce finished computer code (compilers, linkers, etc.) shall be given HAL "drawing numbers" in the "890-xxxxx" series. The "xxxxx" section of the P/N shall be determined from the manufacturer's part number and version number.

Additional "drawing number" assignments will be generated as required.

G. W. Henry
Configuration Manager