## A. Modifying RPM module (revision 60-0268-B)

Make sure the NLP-5x Rapid Prototyping Module (RPM) board has been modified.
If it hasn't,

1. Remove R9 and add a wire connecting the top pad of R9 to the right pad of C17.
2. Add a 2-pin jumper block to JP3 (TRST)
3. Add a 3-pin jumper block to CN3-2

B. Connecting the RPM to the Programming/Verification (PV) board

1. **With the PV board powered OFF** via the ON/OFF switch, connect the RPM via the ribbon cable to the Remote Device connector, JP10.
2. Make sure the TRST jumper (JP3) is in place.
3. Jumper CN3-2 center and rightmost position, in line with the TRST jumper.
4. Connect a jumper wire (clip lead) from the **left-hand** post in CN4 pin VIO (on RPM) to 3.3V on the PV board. Good points on the board are CN2-pin33 (near the upper-left corner of the board), TP3 (VCCB) or TP4 (VCCC).
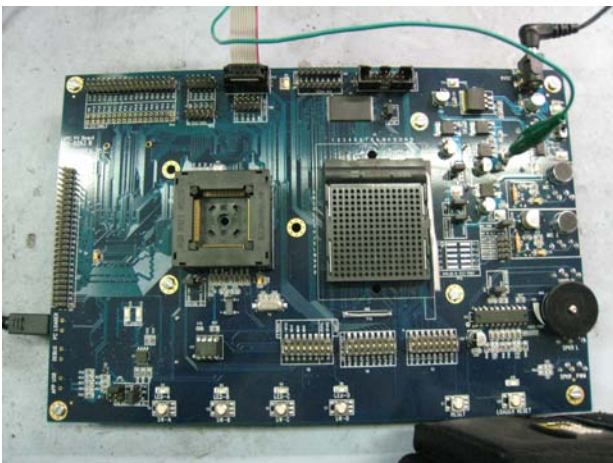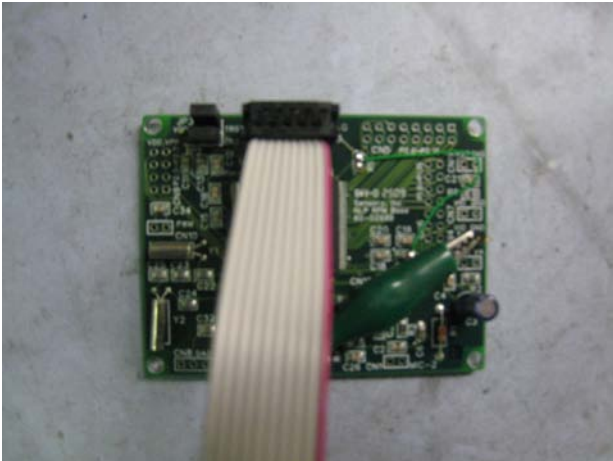
C. Programming the NLP-5x

1. Turn on the PV board via the ON/OFF switch. Verify the REMOTE LED next to JP10 is lit. If not, press LOADER RESET and it should light.
2. Start SL5.
3. Using the PV Board pull-down menu, select Blank Check.
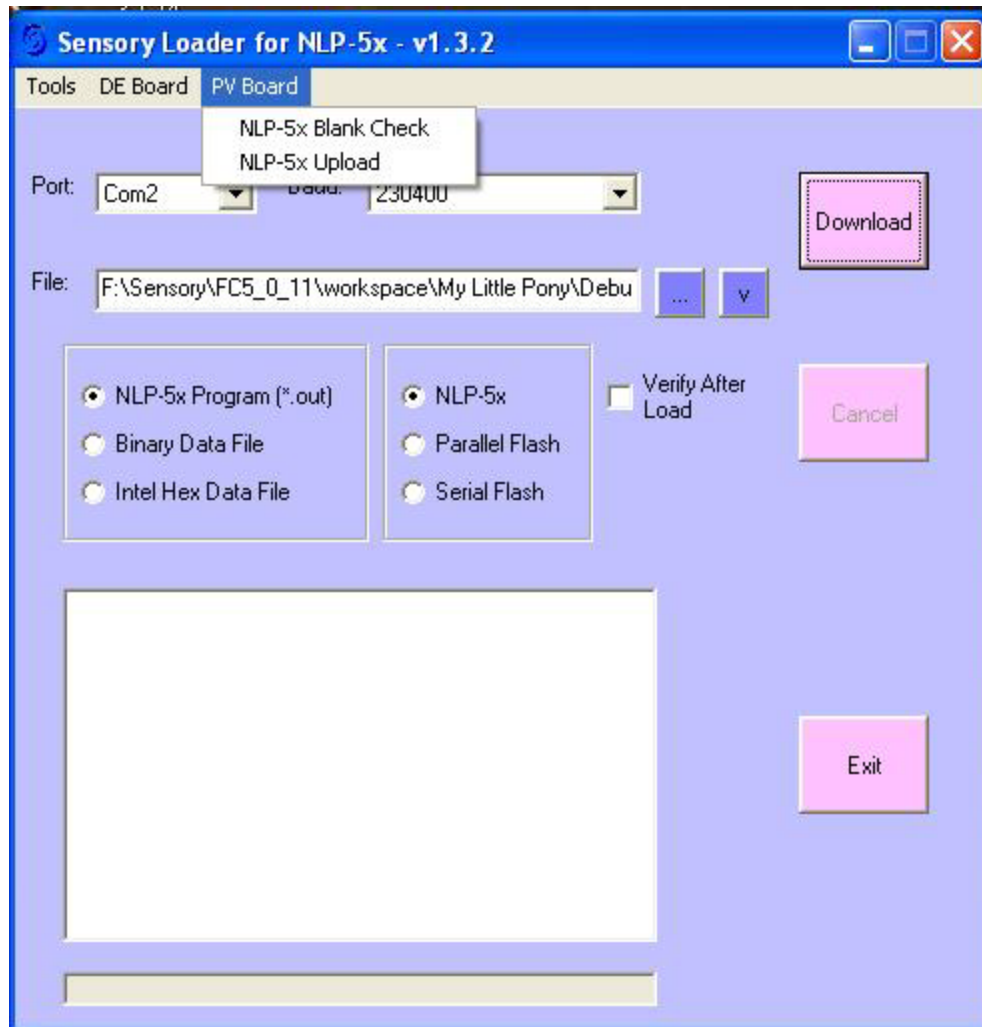
4. If Blank Check passes, select the file and click PROGRAM. Make sure the verify check box is clicked!
5. After programming, power-down the PV board via the ON/OFF switch prior to disconnecting the RPM.
6. ***Important***: Prior to using the newly programmed RPM, remove its TRST jumper and restore the VDD, VPP jumper (CN3-2) to the leftmost position.

The Interactive Speech™ Product Line

Sensory's **Interactive Speech™** product line makes consumer electronics more intelligent by enabling them to talk, hear, move and interact with the external world using naturally sounding spoken commands-all without training and even in noisy environments! Sensory offers both chip and software solutions that offer advanced speech recognition with hands-free functionality, biometric speaker verification, text-to-speech (TTS) synthesis, high quality stereo music and sound effects, robotics and LCD controls, and interactive sensing capabilities. These technologies are designed for integration into cost-sensitive consumer electronic applications such as home appliances, smart toys, music players and personal communication devices. The hardware line includes the NLP-5x Natural Language Processor, the RSC-4x family of mixed signal processors, and the SC-691 music and speech synthesis slave processor. Embedded software options include the FluentSoft™ Recognizer, which offers speech recognition technologies for non-Sensory processors and DSPs. Sensory's BlueGenie™ Voice Interface, the first speech recognition, TTS and synthesis option for *BlueTooth®* enabled devices, offers hands-free control of headsets, music players and other *BlueTooth®* devices.

NLP-5x Natural Language Processor and Development Tools
The NLP-5x features a high-performance 80MHz 16-bit DSP with on-chip ADC, hi-fidelity stereo DAC, microphone preamplifiers, RAM, OTP code and constant memory, and many kinds of peripheral interfaces and control blocks. With Sensory's FluentChip™ 5 firmware, it provides a single chip solution capable of accurate speech recognition; text-to-speech (TTS) synthesis with morphing; compressed speech; high fidelity music; motor and LCD control; and man-machine interfaces (MMI) with interactive sensors. Sensory offers a complete suite of evaluation and development tools that include the ability to create complex grammars with a natural language interface in multiple languages.

RSC-4x Family of Microcontrollers and Developer Tools
The RSC-4x (**Recognition, Synthesis and Control**) product family contains low-cost 8-bit speech-optimized microcontrollers that are fully integrated and include A/D, pre-amplifier, D/A, RAM, and ROM circuitry. With Sensory's FluentChip™ firmware, the RSC family offers speech recognition, speaker verification, speech and music synthesis, voice recording and playback, and an entire suite of interactive robotic and sonic networking technologies. The family is supported by a complete suite of evaluation and development toolkits that include the ability to quickly create speaker independent recognition sets in many languages.

SC6 Slave Processor and Tools
The SC-691 is a standard slave synthesizer that accepts compressed speech data from other microprocessors or microcontrollers and converts it to speech. The chip operates up to 12.32 MIPS, and provides high-quality, low data-rate speech compression and MIDI music synthesis, with unlimited speech duration using external memory. Sensory offers hardware and software tools for analyzing speech files, editing speech data and generating coded speech.

FluentSoft™ Recognizer
The FluentSoft™ Recognizer is the engine powering the FluentSoft**™** SDK. It provides a noise-robust, large-vocabulary, speaker-independent solution with continuous digit recognition and word-spotting capabilities. This small-footprint software recognizes thousands of words and runs on non-Sensory processors including Intel XScale, TI OMAP, and ARM9, and supports operating systems such as MS Windows, Linux, and Symbian.

BlueGenie™ Voice Interface
The BlueGenie Voice Interface software suite runs on CSR's BC-5 MM Kalimba DSP, and enables manufacturers of *Bluetooth* products to integrate full voice control and synthetic speech output without the need for visual displays or complex user interfacing. It frees designers to pack functionality onto small form factor *Bluetooth* devices and answers consumer demand for a "Truly Hands-Free" experience.

Important notices:
Sensory Incorporated (Sensory, Inc.) reserves the right to make changes, without notice, including circuits, standard cells, and/or software, described or contained herein in order to improve design and/or performance. Sensory, Inc. assumes no responsibility nor liability for the use of any of these products, conveys no license or title under any patent, copyright, or mask-work right to these products, and makes no representations or warranties that these products are free from patent, copyright, or mask-work right infringement, unless otherwise specified. Applications that are described herein for any of these products are for illustrative purposes only. Sensory, Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Safety Policy:
Sensory, Inc. products are not designed for use in any systems where malfunction of a Sensory, Inc. product can reasonably be expected to result in a personal injury, including but not limited to life support appliances and devices. Sensory, Inc. customers using or selling Sensory Incorporated products for use in such applications do so at their own risk and agree to fully indemnify Sensory, Inc. for any damages resulting from such improper use or sale.