PPS-2 Plus, Installation and Operation
JLCooper Electronics, September 21, 1992

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Greetings!
Thank you for purchasing the JLCooper Plus Option for the PPS-2. This Plus Option turns your PPS-2 into a remarkably low-priced MTC to SMPTE converter. This permits your hard disk recorder to be the SMPTE master to a machine synchronizer.

The Plus Option is an EPROM chip to replace the EPROM already in your PPS-2. After installation, your PPS-2 will function normally; all of the original features will remain unchanged. When MTC is sent into the PPS-2 set to SMPTE / READ, longitudinal SMPTE is generated out of the SYNC OUT jack. The frame rate of the MTC is preserved.

Warning
Performing this update requires the handling, removal, and replacement of an electro statically sensitive EPROM IC. Improper handling may result in EPROM damage. Also, incorrect installation may damage the PPS-2 itself. JLCooper cannot be held responsible for any damage incurred due to mishandling or improper installation! If you have any doubts about your ability to perform this update, have a qualified person do it for you.

About Handling EPROM's
The EPROM (Erasable Programmable Read Only Memory) included is a special integrated circuit that stores the new Plus feature. It is sensitive to static electricity. Be sure to leave it in is protective metal foam until you are ready to install it. This update should not be attempted on a dry, windy day, unless you have access to a grounded, antistatic workstation. Do not handle the EPROM more than necessary and never carry it in your hand while walking across a carpeted floor.

You will need a Phillips screwdriver, and a small, flat bladed screwdriver

Open the Chassis
To open a PPS-2, use a Phillips screwdriver to remove the four screws on the bottom of the unit that secure the cover. Lift off the cover.

Sometimes the covers are tight. Use a flat screwdriver wrapped in masking tape to avoid scratching the chassis to pry the cover open. The PPS-2 cover wraps around and can catch on the circuit board. So, open with care. Pry the cover up just slightly, and shift it to one side before lifting off the cover. Don't let the cover catch on the circuit board, which may result in damage to the PPS-2.

Locate the EPROM
Look at the EPROM already inside the PPS-2. It is designated as U4.

Observe the Notch
Observe that the EPROM has a small notch at one end. The EPROM's notch points toward the jacks, the same orientation as the other ICs. It is very important that the new EPROM be inserted with the same orientation. Otherwise, the EPROM may be destroyed and the sync box damaged.

Remove the Old EPROM
Remove the old EPROM by very gentle and gradual prying with a small, flat bladed screwdriver. Carefully insert the screwdriver between the socket and the EPROM. You will get into very serious trouble if you accidentally pry up the socket.

Install the new EPROM
Remove the new EPROM form its protective foam. Make sure that all of the pins are straight. Be certain that notch is oriented correctly before insertion. Do not pay any attention to the orientation of the EPROM's label! A label may be put on backwards, but the notch is always correct. Gently insert the EPROM into the socket, and when you have verified that all pins are going where they're supposed to, carefully but firmly press down.

Inspection and Warning
Inspect that the EPROM looks like it has been inserted correctly. If the EPROM is inserted backwards it will be destroyed, and the sync box may be damaged! If any pins are "bent under" or "hanging out" it will be destroyed, and the sync box may be damaged!

Replace the Cover
Put the top cover back on the chassis and secure with four screws.

To Use the PPS-2 Plus as a MTC to SMPTE Converter
All the original functions are still present and operated normally.
To convert MTC to SMPTE, set the switches for MTC, and READ.
Make sure that the software you are using is set up to transmit MTC.
Send MTC into the PPS-2's MIDI input.

Once the PPS-2 receives the MTC message, which switches it sync box internally to the MTC-to-SMPTE mode.

As soon as the PPS-2 Plus receives MTC, it will start generating SMPTE. The SMPTE being generated will have the same time and frame rate as the MTC.

Connect the SMPTE output to any synchronizer that reads SMPTE.

To Use the PPS-2 Plus as a SMPTE to MTC Converter again.
To resume converting SMPTE-to-MTC, switch the PPS-2 OFF, and then back to READ.

Remember that MTC coming into the MIDI Input will immediately switch the PPS-2 Plus into an MTC to SMPTE converter. So, if you want the PPS-2 to stay in its original SMPTE to MTC conversion mode, be sure that you do no accidentally send MTC into the MIDI In. That could happen if you have a MIDI Patch Bay accidentally set to loop the MIDI Out of the PPS-2 back to itself. Likewise, if your sequencing or recording software sends out MTC, be sure that you do not accidentally send it back into the PPS-2 Plus.