

# Local Application Parameters

*Page application*

Mon, Jul 28, 2003

Local applications are a method of adding new features to the local station software without being linked in with the system code. Each entry in the Local Applications Table LATBL contains the context for an invocation of a local application. This permits a single LA to be invoked multiple times with different parameter values. It is analogous to calling a procedure with different arguments passed. This page application allows viewing and modifying the parameters of the LATBL entries in any local station.

## *Page layout*

An example of the LA used for klystron RF phase regulation is as follows:

```
E LOCAL APPS          07/28/03 1037
NODE<0621> NTRY<26>/64 H<0508>
NAME=KRFP  CNTR=EB  DT=0.012 MS
TITL"KLYSTRON RF PHASE REG  "
SVAR=008BF498      07/02/03 1334
ENABLE  B<00B7>*KRFP PHASE ENABL
NBWAIT  C<0094> K1PWAT 300  CYC
PHREAD  C<0004> C1PHAS 180.3 DEG
PHSET   C<042B> L1PADJ 124.2 DEG
GAIN    C<0093> K1PHGN 3.998
AVGCYC  <0020>
LOADCYC <2000>
AVGLOAD C<0095> C1PLOD 0.3  NRM
INHIBIT B<0171> WG REFL ENERGY
        <0000>
```

Enter the target node and LATBL entry# (range 0–63, in this example) and interrupt. That entry is displayed and presented for editing. (The node# following the H prompt is the target for collecting the HELPLOOP text file described below.) If the CNTR word is counting, the LA is currently active and is being called at 15 Hz. The elapsed time of execution is also shown on that line. The name of the LA, a title that describes its function, the current ptr to the static variables of that LA used by the entry, and the version date of the LA are shown. The rest of the display shows up to 10 words used as parameters.

Each parameter line shows some prompt text which is a reminder of its use, where a B or C suffix means that the parameter is actually a Bit# or Chan#, respectively. In either of these two cases, the Bit text or the Chan name/units are shown to the right to verify the parameter word's significance. The state of a Bit# parameter following the parameter field is a " " (0) or a "\*" (1). The value of a Chan# parameter is shown after its name, followed by its units text.

## *Text database*

As each new local application is written, another portion of a "text file" should be added. The text file is actually a named "program" called HELPLOOP that is prepared with the MPW assembler and downloaded in the usual way. A key is used at the start of each program's text info to allow variable length entries. Each entry has a fairly rigid structure organized into 8-character units. An example from the portion used for the KRFP example is as follows:

```
DC  'L***KRFP', 'KLYSTRON RF PHASE REG  '
DC  '          'ENABLE B', 'NBWAIT C'
DC  'PHREAD C', 'PHSET  C', 'GAIN  C', 'AVGCYC  '
DC  'LOADCYC ', 'AVGLOADC', 'INHIBITB'
```

The first 4 characters are the key used to identify the presence of the 4-character name of the LA. After the name is a 24-character title to denote the LA's function. Each parameter uses an 8-character prompt text, which denotes the parameter's function. If the 8<sup>th</sup> character is a B or a C, then the parameter is either a Bit# or a Chan#; otherwise, all 8 characters can be used as the prompt text. (The layout of the parameters above corresponds to the usual appearance of an LATBL entry as viewed on a memory display page.) Any unused parameters on the end need not be included.

When the text file is acquired from the target node specified in the N field, a search is made through all 8-byte elements to find the L\*\*\* key followed by the current name. The prompt text for each parameter is then displayed.

### *Making changes*

Type in new values for the parameter words and interrupt on each one. The display will be updated to reflect any changed Chan or Bit text. type in a new name and interrupt, and the title and parameter prompt text will be changed accordingly. Type a new node# and/or entry# to move to a new LATBL entry. The raise/lower buttons can be used to adjust the entry#.

It is also possible to change the values of a Bit or Chan that is used as a parameter. If an interrupt occurs in the column of the state of a bit " ", indicating zero, or "\*" , indicating one, the bit indicated by the Bit# will be toggled. If an interrupt occurs at the end of the numeric field of a Chan# parameter, and the channel is settable, then that value is sent to that Chan#.

Note that there is no way to enter the name of an LA of interest and cause a search to be performed within the current target node; entering a new name on this page causes the program name of the current entry to be changed! See the page application VERS for a way to list all LATBL entries within a node as well as compare the version dates of all program files with a reference node.

### *Program stats*

The LAPP page application is about 1300 lines of Pascal running in 8K bytes.