

## TSS DISPLAY DRIVER

Programming considerations--an Ammendment  
to previous document of late 1969

I. Disregard everything in previous document (attached, I hope) concerning message buffers; they do not exist.

### II. User Displays

ammendments The maximum normal value of brite is 5.  
additions -- many

If brite is equal to 6, the message will flash on and off about once per second. <sup>(correspondingly Bright)</sup> Values for brite greater than 1 or 2 must be used sparingly; too many lines too bright will cause the screen to flash badly and the PPU to run slowly. Care must be taken not to overwrite headers or keyboard display area. These extend about 45-50 co-ordinates from the top and bottom of the screen.

After changing the file containing a user screen, an event must be sent to the PPU to insure the reflection of these changes up into its copy of the display, in case it happens to be showing that display. This event is a bit mask, with each one bit corresponding to an updated line. The lines are indexed 0-31 in the buffer, and the bits are numbered with bit 0 at the low order end of the word. No response signalling completion will be sent to the user. Read the Periph. Manual for more information about the hardware.

### III. Logical keyboards

The message buffers are implemented as event channels. Messages are sent 10 characters per event, left justified, display code. As many events will be sent as necessary to contain the message. The message, therefore, ends with carriage return (60B) or a 'you lose' event. Be careful if you plan to share a keyboard, things can get garbled if you are not. Again, no guaranties about zero fill of the last event.

### IV. Getting Hold of the Stuff

Capabilities for displays and keyboards are in the Master C-list starting at the index given by the proper word in the special file of interrupt objects. They occur in consecutive, identical groups of three (8 groups) as follow (8 groups)

- display file
- display update event channel
- logical keyboard event channel