Operation Description of Advertisment Panel

1. Supported video format:
- MPEG-1, MPEG-2, DAT(VCD), MPEG-4 AVI, DivX 3.11-5.11, Nero MP4.
- It should play back all video which can be played by YES PMP-9 and the Signma Design Development board.

2. The video can be donwloaded from the host either through USB or Ethernet. During download, we need to display a message in the screen showing that it is downloading.
- USB: The panel will behave like a mass storage device. A serial command is provded to enable and disable the USB mode so that the USB cable is always being plugged into the host.
- Ethernet: The panel will login to a ftp server to get the video. Schedule download is supported. The panel should be smart enough to synchronize the video file list provided that a file list file is existed in the server. That is, download every new video from the server and delete every old video in the panel.

3. Allows commands to be sent from the host to control the playing navigation through RS232. The changes should take place immediately.
- Play, Pause, Stop, Fast Forward, Fast Backward, Skip Next, Skip Previous, Play a specified video.

4. Allows commands to be sent from the host to control the play mode through RS232.
- Normal Play, Random (Shuffle) Play, Repeat one, Repeat all, . The changes should take place immediately.

5. Also support commands to send some text being displayed at the screen. The changes should take place immediately. Two text display mode,
- Still text. The text color, blinking mode and blink speed [TBA] could be changed.
- Scrolling text. The text color, scrolling direction and scrolling speed could be changed.

6. Allows commands to be sent from the host to control the image display through RS232,
- The image is 8-bit color and in bitmap format.
- Display time interval, Skip Next, Skip Previous, Display a specified image.

7. Allow video scaling while text display is needed. The changes should take place immediately. Five video modes,
- Full screen with the text overlay on the top. The text background is half transparent. The text display area could be moved vertically.
- Reduced size sitting at the upper left corner with the text at the bottom and one picture at the right.
- Reduced size sitting at the upper righe corner with the text at the bottom and one picture at the left.
- Reduced size sitting at the lower left corner with the text at the top and one picture at the right.

- Reduced size sitting at the lower right corner with the text at the top and one picture at the left.
The picture to be displayed can be set by serial command.

8. The size of the video can be set by user menu and serial command. The size of the message box and the still picture will be changed accordingly. The changes should take place immediately.

9. Both the text display mode, image display mode and the video mode can be set by user menu and serial command.

10. Time-table for the video, image and the (still / scroll) text.
For the video part, there are 2 formats for the playlist.
The 1st one is simple. It only contains a list of files needed to be played.
For example, there is a file called *playlist.txt*. In this file, it contains a list of files to be played.
The 2nd one is a time-table file which lists out which video will be played at each hour.
For example, there is a file called *playlist06.txt*. In this file, it contains a list of files to be played from 6am to 7am. There is also a file called *playlist07.txt*. It contains a list of files to be played from 7am to 8am.Similar for the files, *playlist08.txt*, *playlist09.txt*, ...,
playlist17.txt, ...*playlist21.txt*, ...
For the image, the formats are same as for the video part.
In the 1st format, the file may be called *image.txt*.
In the 2nd format, the files may be called *image01.txt*, .., *image06.txt*, *image07.txt*, ...,
image21.txt, ...
The text message frame has two modes: Interactive Message mode and Message Broadcasting mode.
For the Message broadcasting mode:
    For the (still / scroll) text, the formats are same as for the video part.
    In the 1st format, the file may be called *message.txt*.
    In the 2nd format, the files may be called *message01.txt*, .., *message06.txt*,
    message07.txt, ..., *message21.txt*, ...
    Besides, both formats will state which mode (still / scroll) and which format (e.g.
    color, speed..) will be used for the display of message.
For the Interactive Message mode, it will display message received from the serial port or from the Ethernet port. Any message coming from the serial port/Ethernet port will cause the mode to be changed to Interactive Message mode. After the interactive message is displayed, it will be resumed to the Message Broadcasting mode.

11. The panel controller board and the main board should be separated. We need a standard connector in the main board to support different panels. The output of the panel controller board could be digital such that it can be connected to the main board. The main board shall supply the maximum voltage from the power adaptor. The voltage regulating is done in the panel controller board. The change of different size of TFT Panel does not involve the change to the main decoder board. Just need to change the panel controller board. The default panel is 8 inches 16:9 digital interface. So, the main

board should be able to connect to the 8 inches panel directly.

12. Stereo audio output with volume control by user menu and serial command. We will have a built-in speaker. The audio part design is in the main board.

13. Composite and YPbPr video output. The video jack design is in the main board.

14. Support contrast and brightness adjustment by user menu and serial command. The changes should take place immediately.

15. Support Real Time Clock display. The time can be set by serial command. The changes should take place immediately.

16. We need a user menu to set the volume, video size, contrast, etc. We would like to have 6 keys to navigate through the menu.
- Menu
- Select
- Left
- Right
- Up
- Down

17. Support CF card.

18. Can optionally add IDE harddisk. Either the HDD or CF can exist at the same time, not both. Support up to 160GB hard disk.

19. Support firmware update either through RS232 or Ethernet. If the download is failed in the middle, the device should remain in the donwload mode and waiting for new download. [TBA]

20. Built-in two font size with up to four lines display. Allow new font size donwloaded by means of firmware upgrade.
- 16x16 (Chinese), 16x8 (European), 4 lines
- 24x24 (Chinese), 24x12 (European), 2 lines

21. Four language version firmware
- Traditional Chinese (BIG5, 宋體) and European
- Simplified Chinese (GB-2312, 宋體) and European
- Japanese (JIS X 0208) and European [TBA]
- Korean (KS C 5601-1987) and European [TBA]

22. The European character set should support
- ISO 8859-1: English, German, Italian, Spanish, Danish, Portuguese, Swedish and Norwegian
- ISO 8859-5: Russian

- ISO 8859-6: Arabic
- ISO 8859-7: Hebrew
- ISO 8859-8: Greek
- ISO 8859-9: Turkish
- ISO 8859-11: Thai
- ISO 8859-15: French
They are in Courier.
Heng Yu will provide the bitmap file.

23. MTBF: 50,000 hours

24. Temperature Requirement: -40 to 70 (Storage), 0 to 45 (Working)

25. Should pass the FCC/CE/C-tick/CCC/UL standard

26. Have reset button. Press reset button will restore the default setting. A confirmation is needed from the user.

27. Have Power button. Press and hold the power button will shut down the unit.

28. Have a CF card status LED to indicate the safe state to insert or remove the card.

29. Support command for reading firmware version.

30. Support command for reading memory usage.

31. All RS232 commands should have a corresponding Ethernet way to send to the Advertment Panel.

32. Able to load a startup picture when the device is power on. The pciture can be changed in the firmware. Lena is responsible for helping Heng Yu to change this picture.

33. Support changing network configuration through user menu and serial command.

34. Two files inside the panel are responsible for saving the settings. One is default.cfg and the other one is setting.cfg. The panel will look for setting.cfg first. If it doesn't exist, it will look for default.cfg. If default.cfg doesn't exist, the hardcoded setting inside the firmware will be used. The .cfg file will be in xml 1.0 format.

35. Support TCP commands by creating socket.

36. Support DHCP. [TBA]