# DMT80480T070_22WT User ManualV2.0

## for multi-media application

**January,2013**

# 1. Overview

DMT80480T070-22W is a multimedia product based on DWIN K600+ module, which carries DWIN DGUS system and integrates single-circuit analog CVBS format video input, digital video and audio display. The product provides two Micro SD card interfaces, one for K600+ downloading procedure and one for multimedia audio and video display. The board provides one USB interface which can be inserted by U disk for multimedia video and audio display. The board has one 3.5mm headset jack, and one 4pin socket for external speaker with the largest power of 1W. Main features of the product are as follows:

◆ wide operating voltage range: +6V ~ +42V;
◆ all features of DGUS system;
◆ support U disk and Micro SD card for video and audio display;
◆ support overlapped words and figures, etc on the interfaces of analog video or digital video;
◆ digital or analog video supports picture-in-picture display of 640x480 resolution or full-screen display of 800x480 resolution;
◆ control switch between digital video and analog video through serial port COM2 of DGUS or serial port of user in the DGUS system;
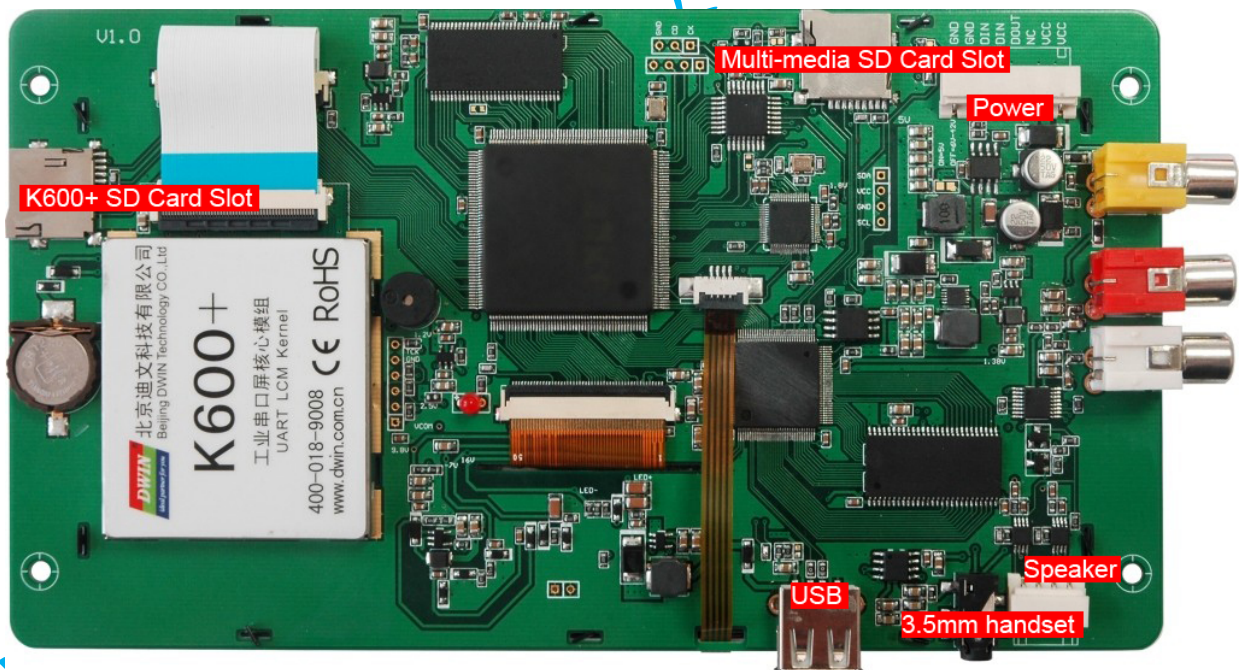


# 2. User Command Set

The user can control switch between digital video and analog video through serial port COM2 of DGUS (refer to Section 4.8 "firmware parameter settings(0x07)" of "DWIN DGUS LCMs Development Guide Ver3.2"; Mode=0x04) (factory defaults; short circuit of jumper J21 of PCB board with jumper cap; J20 unused) or serial port of user (TTL level or RS232 level standards) (short circuit of jumper J20 of PCB board with jumper cap; J21 unused). The command explanation is as follow:

**Mode of serial port:**

115200bps, N81 (1 start bit, 8 data bits, 1 stop bit, no check bit)

**Architecture of data frame:**

| Address | 0x00 | 0x02 | 0x03 | 0x04 |
|---|---|---|---|---|
| Definition | 0xAABB | LEN | CMD | DATA_Pack |
| Explanation | frame header | length of subsequent data | command | data |

**Specification of command set:**

◆ switch to full-screen display of HMI interface:

◆ CMD = 0x01, command: AA + BB + LEN(0x01) + CMD(0x01)

◆ open the analog video interface for 640x480 picture-in-picture display without layer overlapping.

*Note: DMT80480T070-22W supports overlapping of HMI as the background layer over the video layer and displays words, pictures and other information of HMI layer on the video layer; refer to CMD = 0x23 for the command.*

CMD = 0x04, command: AA + BB + LEN(0x01) + CMD(0x04)

◆ open the analog video interface for 800x480 full-screen display without layer overlapping:

CMD = 0x05, command: AA + BB + LEN(0x01) + CMD(0x05)

◆ open the digital video interface for 640x480 picture-in-picture display without layer overlapping:

CMD = 0x10, command: AA + BB + LEN(0x01) + CMD(0x10)

◆ open the digital video interface for 800x480 full-screen display without layer overlapping:

CMD = 0x11, command: AA + BB + LEN(0x01) + CMD(0x11)

◆ mute the speaker:

CMD = 0x12, command: AA + BB + LEN(0x01) + CMD(0x12)

◆ open the speaker:

CMD = 0x13, command: AA + BB + LEN(0x01) + CMD(0x13). After power-on, the default state of speaker is open.

◆ volume up:

CMD = 0x14, command: AA + BB + LEN(0x01) + CMD(0x14)

◆ volume down:

CMD = 0x15, command: AA + BB + LEN(0x01) + CMD(0x15)

◆ directly play video under root directory:

CMD = 0x16, command: AA + BB + LEN(0x02) + CMD(0x16) + SEQ; directly play video according to documents under root directory. Play video according to assigned number; for example, SEQ = 0x00, play the No. 1 video under root directory; SEQ = 0x01, play the No. 2 video under root directory.

*Important note: the documents are sequenced according to the copying sequence; the user shall copy 00.rmvb into SD card first (or U disk), and 00.rmvb will be No. 1 and be played during SEQ = 0x00; the user shall copy 01.rmvb into SD card first (or U disk), and 01.rmvb will be No. 2 and be played during SEQ = 0x01. The rule for display sequence of music is the same.*

◆ directly play music under root directory:

CMD = 0x17, command: AA + BB + LEN(0x02) + CMD(0x17) + SEQ; directly play music according to documents under root directory. Play music according to assigned number; SEQ = 0x00, play the No. 1 music under root directory; SEQ = 0x01, play the No. 2 music under root

directory. The display sequence of music is the same as the above display sequence of video.

◆ stop and continue display; this command is effective during video or music display;

CMD = 0x18, command: AA + BB + LEN(0x01) + CMD(0x18)

◆ exit play mode:

CMD = 0x19, command: AA + BB + LEN(0x01) + CMD(0x19)

◆ previous:

CMD = 0x1A, command: AA + BB + LEN(0x01) + CMD(0x1A)

◆ next:

CMD = 0x1B, command: AA + BB + LEN(0x01) + CMD(0x1B)

◆ fast forward:

CMD = 0x1C, command: AA + BB + LEN(0x01) + CMD(0x1C)

◆ fast reverse:

CMD = 0x1D, command: AA + BB + LEN(0x01) + CMD(0x1D)

◆ switch to digital audio/video end:

CMD = 0x20, command: AA + BB + LEN(0x01) + CMD(0x20).

*Note: DMT80480T070-22W has 3.5mm headset jack and left/right channel speakers of 1w power for audio output from digital audio/video or external left/right channel input (red and white terminals). After power-on, the default state of audio output is digital audio/video output.*

◆ switch to external left/right channel audio end:

CMD = 0x21, command: AA + BB + LEN(0x01) + CMD(0x21)

◆ close audio, namely neither headset nor speaker plays audio:

CMD = 0x22, command: AA + BB + LEN(0x01) + CMD(0x22)

◆ open the analog video interface for 640x480 picture-in-picture display.

It can realize overlapping of analog video interface and HMI interface. Cover the part not requiring overlapping of HMI interface with 16-bit white (0xFFFF), and display the part requiring overlapping in non-white color.

CMD = 0x23, command: AA + BB + LEN(0x01) + CMD(0x23)

◆ open the analog video interface for 800x480 full-screen display.

It can realize overlapping of analog video interface and HMI interface. Cover the part not requiring overlapping of HMI interface with 16-bit white (0xFFFF), and display the part requiring overlapping in non-white color.

CMD = 0x24, command: AA + BB + LEN(0x01) + CMD(0x24)

◆ open the digital video interface for 640x480 picture-in-picture display.

It can realize overlapping of digital video interface and HMI interface. Cover the part not requiring overlapping of HMI interface with 16-bit white (0xFFFF), and display the part requiring overlapping in non-white color.

CMD = 0x25, command: AA + BB + LEN(0x01) + CMD(0x25)

◆ open the digital video interface for 800x480 full-screen display.

It can realize overlapping of digital video interface and HMI interface. Cover the part not requiring overlapping of HMI interface with 16-bit white (0xFFFF), and display the part requiring overlapping in non-white color.

CMD = 0x26, command: AA + BB + LEN(0x01) + CMD(0x26)

# 3. User Interface

◆   analog video terminal interface:

The produce provides one standard AV terminal interface (J13), with the schematic diagram as follows:
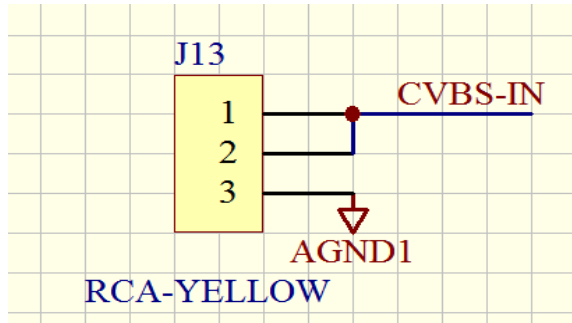


◆   external left/right channel speaker interface:

The produce provides one 4pin 2.54mm-spacing socket interface, with the schematic diagram as follows: