NOVATEK
聯 詠 科 技

Data Sheet

*For **NT71851C***

Timing Controller for High Performance LCD Panel_ACC_AUX_Application Note

Preliminary V0.3

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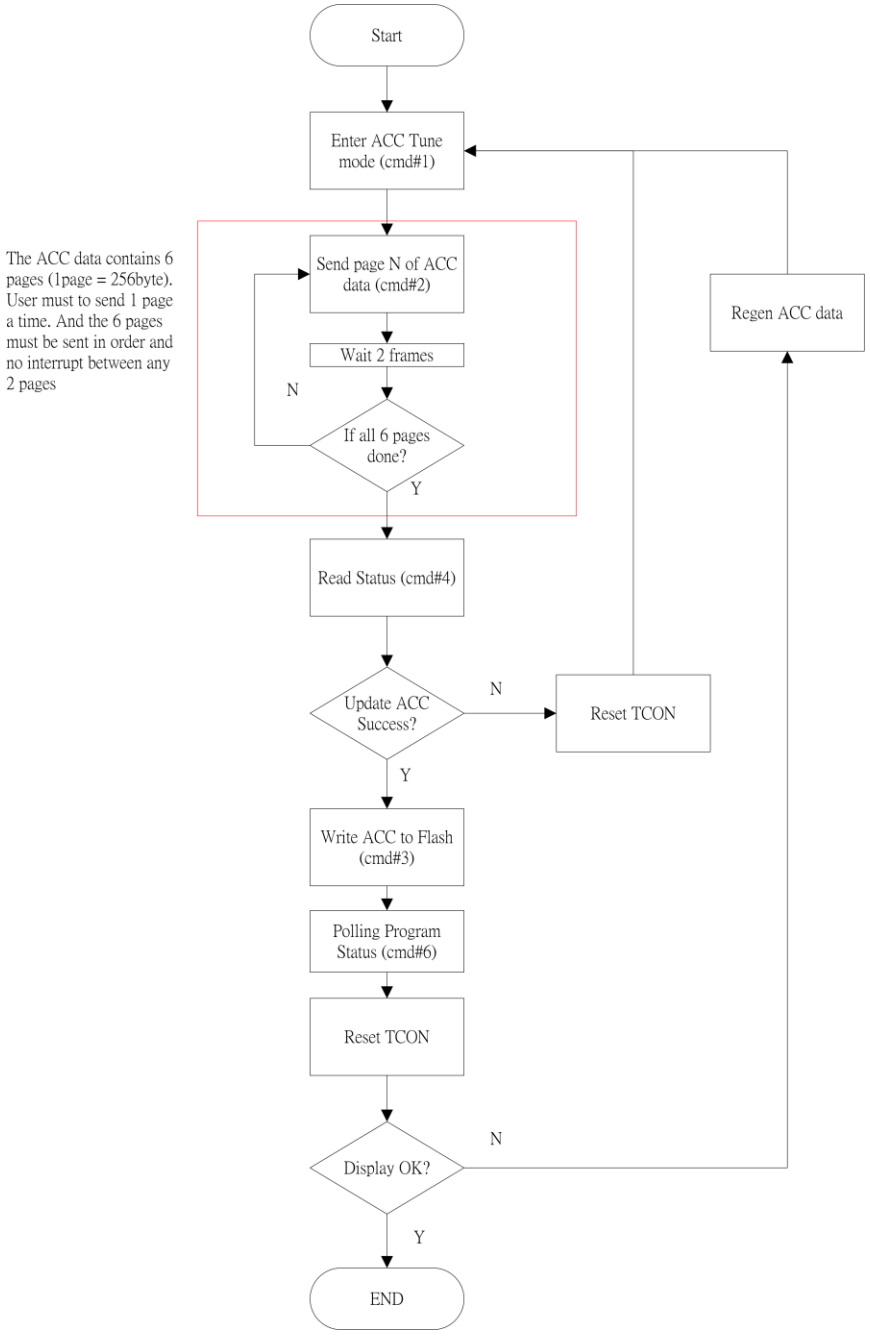
Revision History

Specification Revision History			
Version	**Content**	**Editor**	**Release Date**
0.1	1. Preliminary SPEC V0.1	Jym	2019/08/29
0.2	1. Fix typo error	Jym	2019/09/11
0.3	1. Add polling Write ACC to flash status command	Jym	2019/09/17

Block Diagram



1. AUX command discriptions

1.Enter ACC tune mode command

step	AUX command	description
1	8 00102 00 C0	Wr DPCD 0x00102=0xC0 Disable 16/32 mode function
2	4 00062 00 FF	Write Aux Device Address:0x00062, Data: 0xFF
	4 00062 00 3C	Write Aux Device Address:0x00062, Data: 0x3C
	4 00062 00 C3	Write Aux Device Address:0x00062, Data: 0xC3
	4 00062 00 55	Write Aux Device Address:0x00062, Data: 0x55
	4 00062 00 AA	Write Aux Device Address:0x00062, Data: 0xAA
	4 00062 00 51	Write Aux Device Address:0x00062, Data: 0x51
	4 00062 00 01	Write Aux Device Address:0x00062, Data: 0x01
	0 00062	MOT=0,Release I2C Bus
3	8 00102 00 00	Wr DPCD 0x00102=0x00 Enable 16/32 mode function

2.Send Page N of ACC data command

step	AUX command	description
1	8 00102 00 C0	Wr DPCD 0x00102=0xC0 Disable 16/32 mode function
2	4 00062 00 20+N	Write Aux Device Address:0x00062, Send Nth page data, the page is from 0~5 Ex: Send 3th page data=> 0x20+0x03 = 0x23 4 00062 00 23 4 00062 00 00
	4 00062 00 00	
	4 00062 00 data0	MOT=1,Write Data0
	4 00062 00 data1	MOT=1,Write Data1
	.....	.....
	4 00062 00 data255	MOT=1,Write Data255
	0 00062	MOT=0,Release I2C Bus
3	8 00102 00 00	Wr DPCD 0x00102=0x00 Enable 16/32 mode function

3.Write ACC to flash command

step	AUX command	description
1	8 00102 00 C0	Write DPCD 0x00102=0xC0 Disable 16/32 mode function
2	4 00062 00 FF	Write Aux Device Address:0x00062, Data: 0xFF
	4 00062 00 5F	Write Aux Device Address:0x00062, Data: 0x5F
	4 00062 00 05	Write Aux Device Address:0x00062, Data: 0x05
	0 00062	MOT=0,Release I2C Bus
3	8 00102 00 00	Write DPCD 0x00102=0x00 Enable 16/32 mode function

PS: It is needed to wait MCU writing data to flash. The waiting time could be calculated by following formula. sector_erase_time and page_program_time need to refer to flash spec as following image shows.

MCU_runtime(60ms)+5* sector_erase_time+75*page_program_time

winbond

11.7 AC Electrical Characteristics (cont'd)

DESCRIPTION	SYMBOL	ALT	SPEC			UNIT
			MIN	TYP	MAX	
Page Program Time	tPP			1.5	3	ms
Sector Erase Time (4KB)	tSE			120	250	ms

4.Read Status command

step	AUX command	description
1	8 00102 00 C0	Write DPCD 0x00102=0xC0 Disable 16/32 mode function
2	4 00062 01 FF 5E	Write Aux Device Address:0x00062, Status address 0xFF5E
	5 00062 00 00 status	Read back status code If status code equals 0x97 then update ACC success. Otherwise, update ACC fail.
	1 00062	MOT=0,Release I2C Bus
3	8 00102 00 00	Write DPCD 0x00102=0x00 Enable 16/32 mode function

5.Reset TCON command

step	AUX command	description
1	8 00102 00 C0	Write DPCD 0x00102=0xC0 Disable 16/32 mode function
2	4 00062 00 FF	Write Aux Device Address:0x00062, Data: 0xFF
	4 00062 00 5F	Write Aux Device Address:0x00062, Data: 0x5F
	4 00062 00 99	Write Aux Device Address:0x00062, Data: 0x99
	0 00062	MOT=0,Release I2C Bus
3	8 00102 00 00	Write DPCD 0x00102=0x00 Enable 16/32 mode function

PS: It is needed to wait one second for TCON reset by this command.

6.Polling Write ACC to flash Status command

step	AUX command	description
1	8 00102 00 C0	Write DPCD 0x00102=0xC0 Disable 16/32 mode function
2	4 00060 01 00 F4	Write Aux Device Address:0x00060, Status address 0x00F4
	5 00060 00 00 status	Read back status code If status code equals 0x97, it means the Write ACC to flash action finished.
	1 00060	MOT=0,Release I2C Bus
3	8 00102 00 00	Write DPCD 0x00102=0x00 Enable 16/32 mode function