



Analogix Aux Command User Guide

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Aux command descriptions

A.1 Write Password

Step	AUX command	Description
1	8 004F5 04 41564f2016	Wr DPCD 0x004F5=0x41, 0x56, 0x4f, 0x20, 0x16

Note: TCON Can be accessed after writing password.

A.2 Enable/Disable HW Write Protection (GPIO) for Flash

Step	AUX command	Description
1	9 00433 00 XX	Read WP GPIO setting from DPCD 00433h. XX is WP GPIO number.
2	8 004f0 04 030004 XX data	Write 0x3:0x4 XX = data Enable data = 0x7F Disable data = 0x7E

A.3 Enable/Disable SW Write Protection for Flash (Write Flash status register)

A.4-1 For Balsa2(ANX2423/2424) and Mimosa(AXN2176/2177/2677/2119/2275) Tcon

Step	AUX command	Description
1	Disable HW write protection	Reference A.2
2	8 004f0 04 07000024 00	DMA operation software mode
3	8 004f0 04 07000 190 e3	software command selection
4	8 004f0 04 07000 1a3 aa	Clear SPI writing buffer
5	8 004f0 04 07000 19c 00	Set data length
6	8 004f0 04 07000 19d 00	Set data length
7	8 004f0 04 07000 19e 00	Set data length
8	8 004f0 04 07000 196 06	Flash write enable command
9	Delay 20 ms	
10	8 004f0 04 07000 1a3 aa	Clear SPI writing buffer
11	8 004f0 04 07000 19c 00	Set data length
12	8 004f0 04 07000 19d 00	Set data length
13	8 004f0 04 07000 19e 00	Set data length
14	8 004f0 04 07000 100 data	Enable write protect: data=0x9C Disable write protect: data= 0x00

		(Flash status register, Reference flash datasheet)
15	8 004f0 04 07000196 01	Flash write status register command
16	Delay 20 ms	

Note: use W25Q80EW as example, different flash may have different register offset.

A.4 Write EDID to Flash

Step	AUX command	Description
1	Disable HW write protection	Reference A.2
2	Disable SW write protection	Reference A.4
3	8 004f0 04 0e000030 00	I2C switch to Master mode
4	8 0040d 00 c0	Enable data access
5	8 0040c 00 5a 8 0040c 00 a5 8 0040c 00 c3 8 0040c 00 3c 8 0040c 00 aa	Write password of RISC-V for password EDID data program command
6	8 004F5 04 41564f2016	Write TCON password
7	4 00031012000 00003107xxxxxxxxxxxxxxxx 4 00031012008 00003107xxxxxxxxxxxxxxxx 4 00031012078 00003107xxxxxxxxxxxxxxxx	Write address Write 8bytes data Write last 8bytes data
8	8 0040d 00 0c	Disable data writing
9	Delay 300 ms	
10	Enable SW write protection	Reference A.4
11	Enable HW write protection	Reference A.2

Note: Power off then power on TCON after EDID writing is completed to re-load EDID from Flash.

A.5 Read EDID from Flash

Step	AUX command	Description
1	8 004f0 04 0e000030 00	I2C switch to Master mode
2	4 000500000	I2c over AUX write device address 0xA0
3	5 000500f if TCON reply 20; 5 000500f 00xxxxxxxxxxxxxxxxxxxxxxxxxxxx Loop 5000500f until read back 128bytes active EDID	read 16bytes EDID from TCON Defer and resend Resend read command to read 16bytes EDID Read back active EDID data from TCON
4	1 00050	Stop command

A.6 Read EDID from TCON

Step	AUX command	Description
1	8 004f5 04 41564f2016	TCON authorization
2	8 004f0 04 0e00003015	Data bus select I2C
3	0 00031 01 20 00 1 00031 0f data0-data15 0 00031 01 20 10 1 00031 0f data16-data31 0 00031 01 20 20 1 00031 0f data32-data47 0 00031 01 20 30 1 00031 0f data48-data63 0 00031 01 20 40 1 00031 0f data64-data79 0 00031 01 20 50 1 00031 0f data80-data95 0 00031 01 20 60 1 00031 0f data96-data111 0 00031 01 20 70 1 00031 0f data112-data127	Read 128 bytes EDID data

A.7 Modify Register Value (DAC VCOM)

Step	AUX command	Description
1	8 004F5 04 41564f2016	TCON authorization
2	8 004f0 04 0e00003009	Data bus select
3	0 0009e 00 81	DAC VCOM slave address: 0x4f Value: 0x40 Single write 0x40 to DAC address 0x4f

A.8 Read Register Value (DAC VCOM)

Step	AUX command	Description
1	8 004F5 04 41564f2016	TCON authorization
2	8 004f0 04 0e00003009	Data bus select
3	1 0009f 00	DAC VCOM slave address: 0x4f single read DAC from salve address 0x4f

2 Revision History

Table 2-1 Document Revision History

Revision	Date	Changes
Release 1	Sep 2022	Initial release
Release 2	Feb 2024	Added A.2 ANX2119/2275/2424 WP GPIO
Release 2	Mar 2024	Change DAC VCOM slave address

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