



NOVATEK

聯 詠 科 技

Data Sheet

For NT71837

Aux Control Code_Application Note

Preliminary V0.1

Contents

REVISION HISTORY.....	3
PROCEDURE.....	4

Revision History

Specification Revision History			
Version	Content	Editor	Release Date
0.1	1. Aux Control Code V0.1	Jym	2023/02/23

Procedure

We will introduce 5 applications in NT71837 as below :

1. EDID Read
2. EDID Write
3. DVCOM Read
4. DVCOM Write
5. PWR VGL Disable
6. PDF Enable
7. PDF Disable

Item 1 : EDID Read

We will show EDID Read action flow as below:

1. Send the Aux command as below:
 - (1) 40 00 50 00 00 (Write Aux Device Address:0x00050, word offset:0)
 - (2) 50 00 50 0f (Read Aux Device Address:0x00050, Read EDID 0x00~0x0f)
 - (3) 50 00 50 0f (Read Aux Device Address:0x00050, Read EDID 0x10~0x1f)
◦ ◦ ◦
 - (4) 50 00 50 0f (Read Aux Device Address:0x00050, Read EDID 0x70~0x7f)
 - (5) 10 00 50 (Release the I2C Bus)

Item 2 : EDID Write

We will show EDID Write action flow in 1 EEPROM structure.

1. Write DPCD 0x00102 Data=00
2. Write Aux Device Address: 0x00064, word offset = 04, Data=80
 - (1) 40 00 64 00 04
 - (2) 40 00 64 00 80
 - (3) 00 00 64
3. Write DPCD 0x00102 Data=00
4. Write Aux Device Address: 0x00064, word offset = 10, Data=01
 - (1) 40 00 64 00 10
 - (2) 40 00 64 00 01
 - (3) 00 00 64
5. Write Aux Device Address: 0x00064, word offset = 29, Data=00
 - (1) 40 00 64 00 29
 - (2) 40 00 64 00 00
 - (3) 00 00 64
6. Write Aux Device Address :0x00064, word offset = 20, Data=FF
 - (1) 40 00 64 00 20

- (2) 40 00 64 00 FF
- (3) 00 00 64
- 7. Write Aux Device Address :0x00064,word offset = 20, Data=5A
 - (1) 40 00 64 00 20
 - (2) 40 00 64 00 5A
 - (3) 00 00 64
- 8. Write Aux Device Address :0x00064,word offset = 20, Data=A5
 - (1) 40 00 64 00 20
 - (2) 40 00 64 00 A5
 - (3) 00 00 64
- 9. Write Aux Device Address :0x00064,word offset = 20, Data=C3
 - (1) 40 00 64 00 20
 - (2) 40 00 64 00 C3
 - (3) 00 00 64
- 10. Write Aux Device Address :0x00064,word offset = 20, Data=3C
 - (1) 40 00 64 00 20
 - (2) 40 00 64 00 3C
 - (3) 00 00 64
- 11. Write Aux Device Address :0x00064,word offset = 20, Data=AA
 - (1) 40 00 64 00 20
 - (2) 40 00 64 00 AA
 - (3) 00 00 64
- 12. Write DPCD 0x00102 Data=C0
- 13. Send the Aux command as below:
 - (1) 40 00 50 01 00 00 (Write Aux Device Address:0x00050, word offset:0x0000)
 - (2) 40 00 50 0f EDID00~EDID0f (MOT=1, Write EDID 0x00~0x0f)
 - (3) 40 00 50 0f EDID10~EDID1f (MOT=1, Write EDID 0x10~0x1f)
 - ◦ ◦
 - (4) 40 00 50 0f EDID70~EDID7f (MOT=1, Write EDID 0x70~0x7f)
 - (5) 00 00 50 (MOT=0, Release I2C Bus)

Item 3 : DVCOM Read

1. Write DPCD 0x00102 Data=00
2. Write Aux Device Address: 0x00064, word offset = 10, Data=01
 - (1) 40 00 64 00 10
 - (2) 40 00 64 00 01
 - (3) 00 00 64
3. Write Aux Device Address: 0x00064, word offset = 29, Data=00
 - (1) 40 00 64 00 29
 - (2) 40 00 64 00 00
 - (3) 00 00 64
4. Write Aux Device Address: 0x00064, word offset = 04, Data=80
 - (1) 40 00 64 00 04
 - (2) 40 00 64 00 80
 - (3) 00 00 64
5. Write DPCD 0x00102 Data=C0
6. Send the Aux command as below: (Ex: Read the register 0x2C)
 - (1) 40 00 4f 00 2C (Write Aux Device Address:0x0004f, word offset:2C)
 - (2) 50 00 4f 00 (Read DVCOM Register 0x2C)
 - (3) 10 00 4f (MOT=0, Release I2C Bus)
7. **System power off & restart the system again.**

Item 4 : DVCOM Write

1. Write DPCD 0x00102 Data=00
2. Write Aux Device Address: 0x00064, word offset = 10, Data=01
 - (1) 40 00 64 00 10
 - (2) 40 00 64 00 01
 - (3) 00 00 64
3. Write Aux Device Address: 0x00064, word offset = 29, Data=00
 - (1) 40 00 64 00 29
 - (2) 40 00 64 00 00
 - (3) 00 00 64
4. Write Aux Device Address: 0x00064, word offset = 04, Data=80
 - (1) 40 00 64 00 04
 - (2) 40 00 64 00 80
 - (3) 00 00 64

5. Write DPCD 0x00102 Data=C0
6. Send the Aux command as below: (Ex: Write the register 0x2C)
 - (1) 40 00 4f 00 2C (Write Aux Device Address:0x0004f, word offset:2C)
 - (2) 40 00 4f 00 AA (Write DVCOM Register 0x2C = AA)
 - (3) 00 00 4f (MOT=0, Release I2C Bus)
7. **System power off & restart the system again.**

Item 5 : PWR VGL DISABLE

1. Write DPCD 0x00102 Data=00
2. Write Aux Device Address: 0x00064, word offset = 10, Data=01
 - (1) 40 00 64 00 10
 - (2) 40 00 64 00 01
 - (3) 00 00 64
3. Write Aux Device Address: 0x00064, word offset = 29, Data=00
 - (1) 40 00 64 00 29
 - (2) 40 00 64 00 00
 - (3) 00 00 64
4. Write Aux Device Address: 0x00064, word offset = 04, Data=80
 - (1) 40 00 64 00 04
 - (2) 40 00 64 00 80
 - (3) 00 00 64
5. Write DPCD 0x00102 Data=C0
6. Send the Aux command as below: (Ex: Write the register 0x00 & 0xFF)
 - (1) 40 00 4E 00 00 (Write Aux Device Address:0x0004E, word offset:00)
 - (2) 40 00 4E 00 0A (Write Register 0x00 = 0Ah)
 - (3) 00 00 4E (MOT=0, Release I2C Bus)
 - (4) 40 00 4E 00 FF (Write Aux Device Address:0x0004E, word offset:FF)
 - (5) 40 00 4E 00 80 (Write Register 0xFF = 80h)
 - (6) 00 00 4E (MOT=0, Release I2C Bus)
7. **System power off & restart the system again.**

Item 6 : PDF Enable

1. Write DPCD 0x00102 Data=00
2. Write Aux Device Address: 0x00064, word offset = 04, Data=80
 - (1) 40 00 64 00 04
 - (2) 40 00 64 00 80
 - (3) 00 00 64

3. Write Aux Device Address: 0x00064, word offset = 10, Data=01
 - (1) 40 00 64 00 10
 - (2) 40 00 64 00 01
 - (3) 00 00 64
4. Write Aux Device Address: 0x00064, word offset = 29, Data=00
 - (1) 40 00 64 00 29
 - (2) 40 00 64 00 00
 - (3) 00 00 64
5. Write DPCD 0x00102 Data=C0
6. Read back register 0xF88 original value:
 - (1) 40 00 60 00 0F
 - (2) 40 00 60 00 88
 - (3) 10 00 60 00
00 rdValue
7. Set rdValue bit7 to 1 and save as wrValue: wrValue = rdValue|0x80
8. Write register 0xF88 with wrValue:
 - (1) 40 00 60 00 0F
 - (2) 40 00 60 00 88
 - (3) 40 00 60 00 wrValue
 - (4) 00 00 60

Item 7 : PDF Disable

1. Write DPCD 0x00102 Data=00
2. Write Aux Device Address: 0x00064, word offset = 04, Data=80
 - (1) 40 00 64 00 04
 - (2) 40 00 64 00 80
 - (3) 00 00 64
3. Write Aux Device Address: 0x00064, word offset = 10, Data=01
 - (1) 40 00 64 00 10
 - (2) 40 00 64 00 01
 - (3) 00 00 64
4. Write Aux Device Address: 0x00064, word offset = 29, Data=00
 - (1) 40 00 64 00 29
 - (2) 40 00 64 00 00
 - (3) 00 00 64
5. Write DPCD 0x00102 Data=C0
6. Read back register 0xF88 original value:
 - (1) 40 00 60 00 0F
 - (2) 40 00 60 00 88
 - (3) 10 00 60 00

00 rdValue

7. Set rdValue bit7 to 0 and save as wrValue: $wrValue = rdValue \& 0xEF$

8. Write register 0xF88 with wrValue:

(1) 40 00 60 00 0F

(2) 40 00 60 00 88

(3) 40 00 60 00 wrValue

(4) 00 00 60