AURORA Manual

Contents	Revision	Author / Date
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Protocol 내용 수정	1.0.1	Jina Lee / 2011-05-04

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1. AURORA (오로라)

1.1 프로그램 개요

- Touch Screen 개발을 위한 전용 툴
- 동작환경: Window Series (32/64bit 지원)
- 동작전압: 3.3V

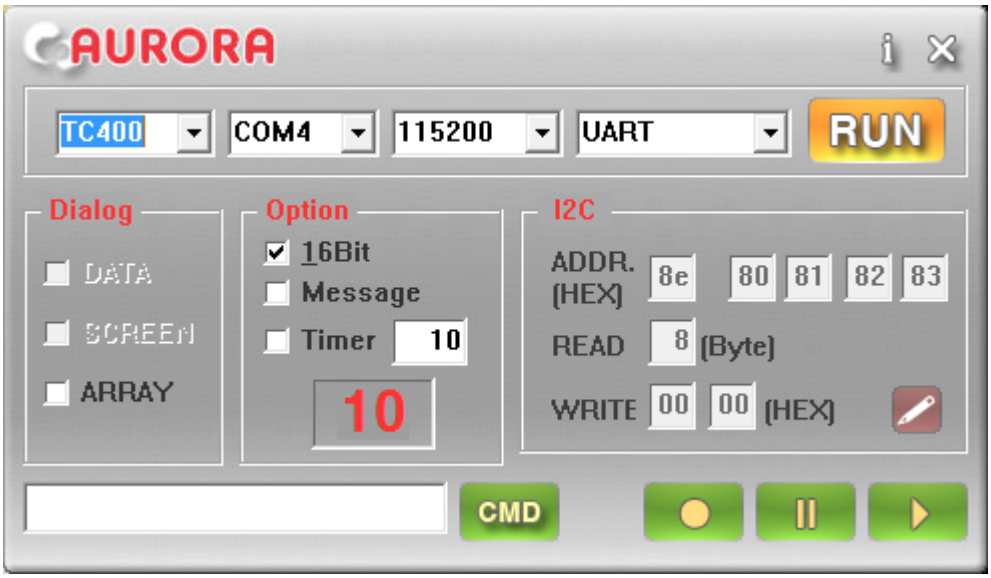


그림 1

1.2 프로그램 기능

A. Main AURORA

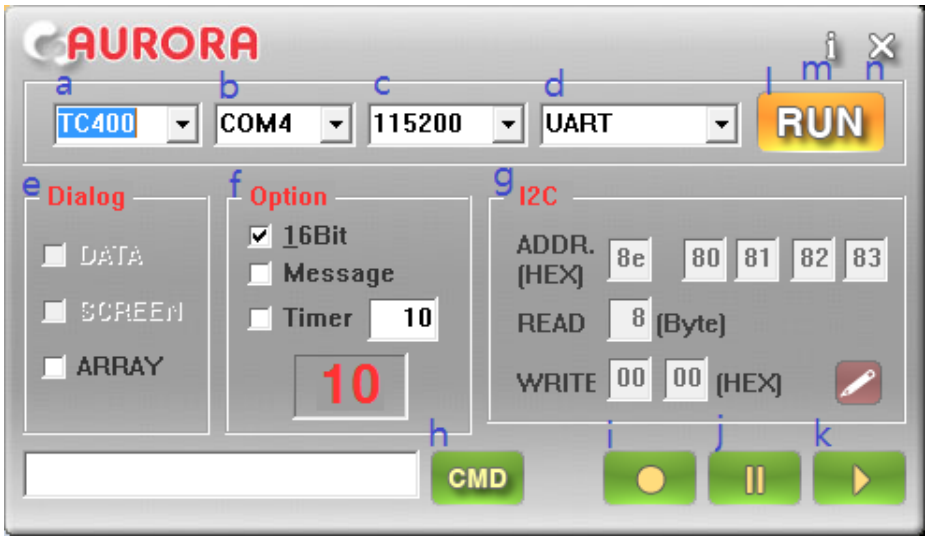


그림 2

a. - Device 선택

b. - Comport 선택

c. - Baud rate 선택 (UART 115200 선택)

d. - 통신 방식 선택

e. - Array Dialog 호출 (B. Array 참조)

f. - 데이터 단위를 2Bytes씩 처리 (기본 1Bytes 처리)

- 콘솔 창으로 Message 출력

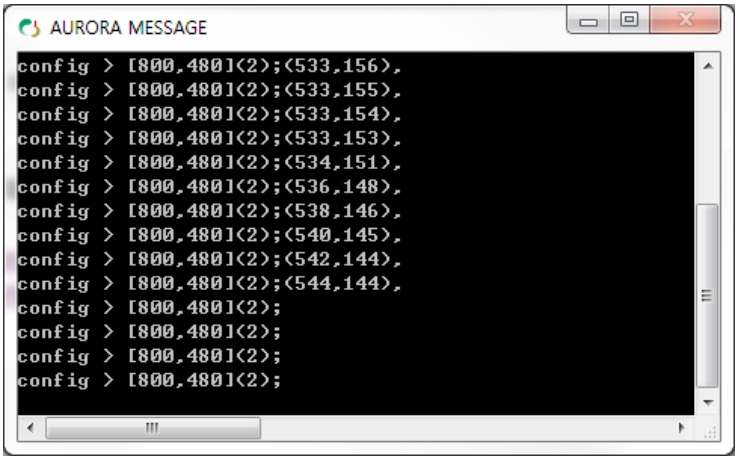
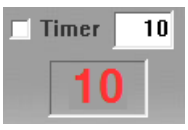


그림 3

 - 체크되면 설정된 숫자만큼 Timer 작동 (1초 단위)

g. I2C 주소, 읽을 크기, 쓰기 값 등 설정

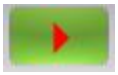
h.

- UART통신 시 Command를 보냄

i. - 데이터 녹화

j. - 녹화된 데이터 Play 중 잠시 멈춤

k. - 녹화된 데이터 Play

 - 녹화 중지

l.

- 통신 시작

- 통신 종료

m. About AURORA

n. AURORA 종료

B. ARRAY

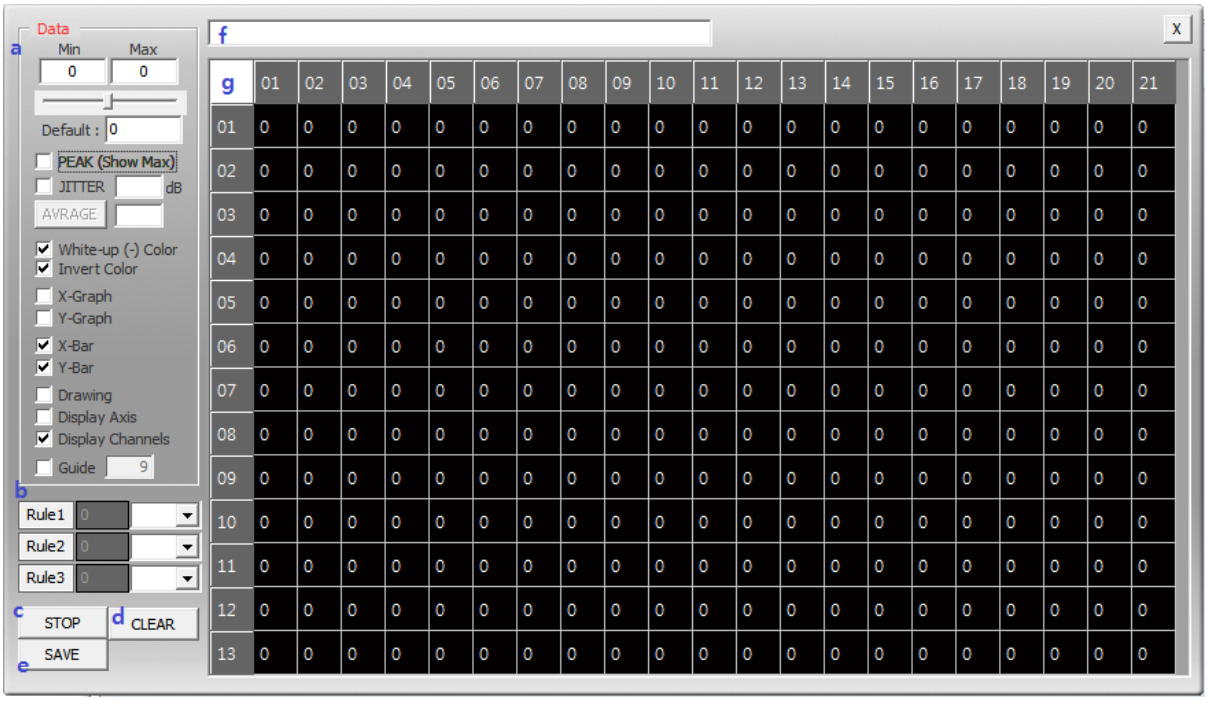
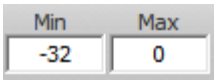


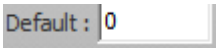
그림 4

a. 데이터 처리 옵션

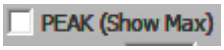
* 

- 현재 표의 가장 작은 값과 큰 값을 실시간 출력

* - 표에 표현된 색 농도 조절

* 

- 각 표에 표시된 값을 모든 Cell 에 더해줌

* 

- 각 Cell 에서 최고치 경신된 값만 출력

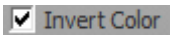
*

- SNR 출력

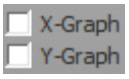
방법) JITTER 체크 (AVERAGE 버튼활성화) → 안정화 시간 → AEVERAGE 클릭 → 패널에 Touch → SNR 출력

*

- 음수는 하얀색으로 출력

* 

- Cell 색상 전부 반전

* 

- 각 X, Y 축 Cell 마다 Graph 출력

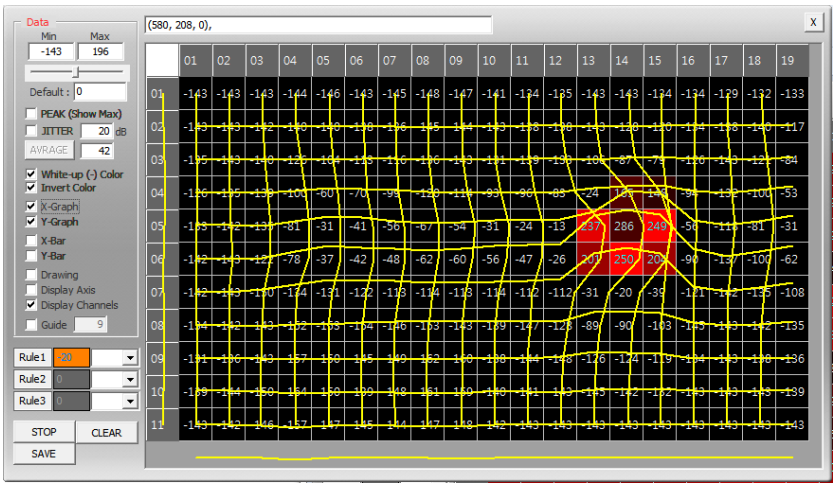
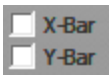


그림 5

* 

- 각 X, Y 축 값 Bar 형태로 출력 (Self 방식 사용)

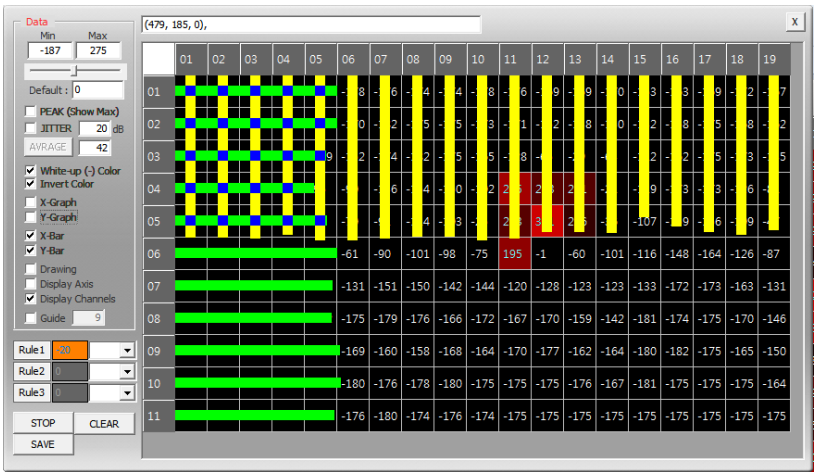
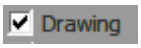
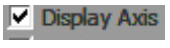


그림 6

* 

- 선 그리기



- 축 그리기

- 각 Cell 값 표시

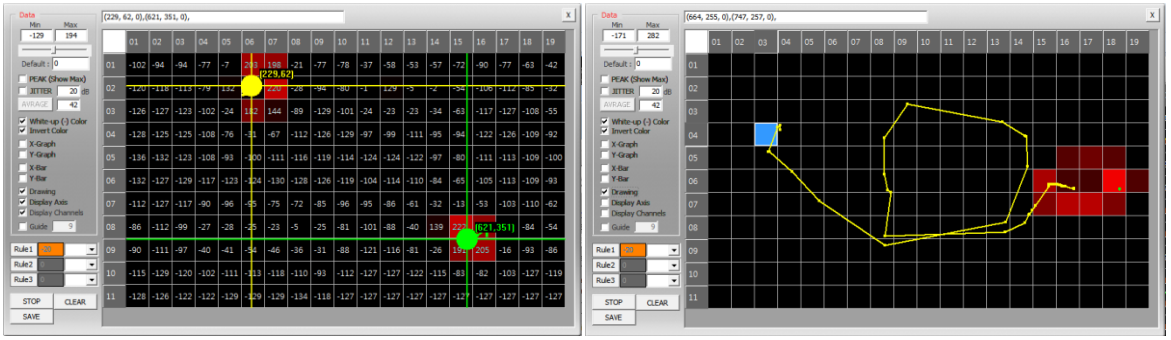
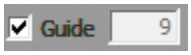


그림 7

*  - Guide line 출력

- Array Stop 상태일 때 Size 변경 가능

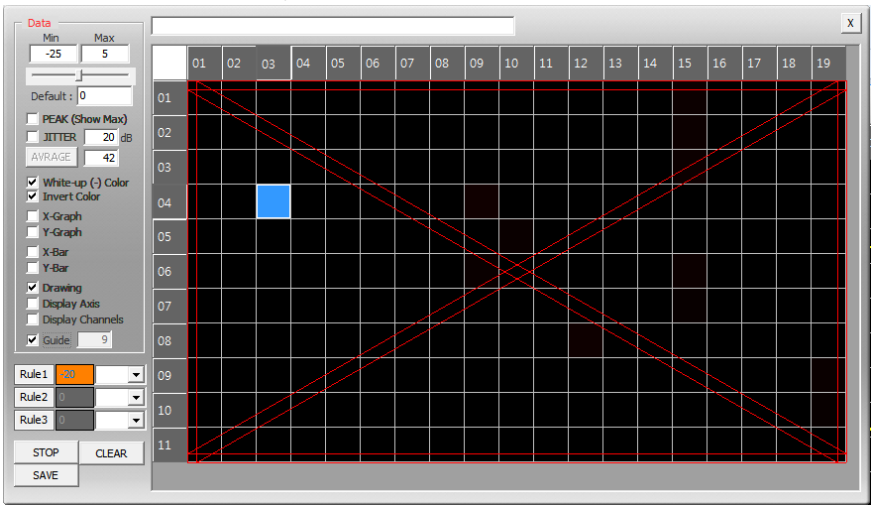


그림 8

b. Rule 기능(3 개까지 가능)

- 값과 조건을 설정하면 표에 지정된 색상으로 표시

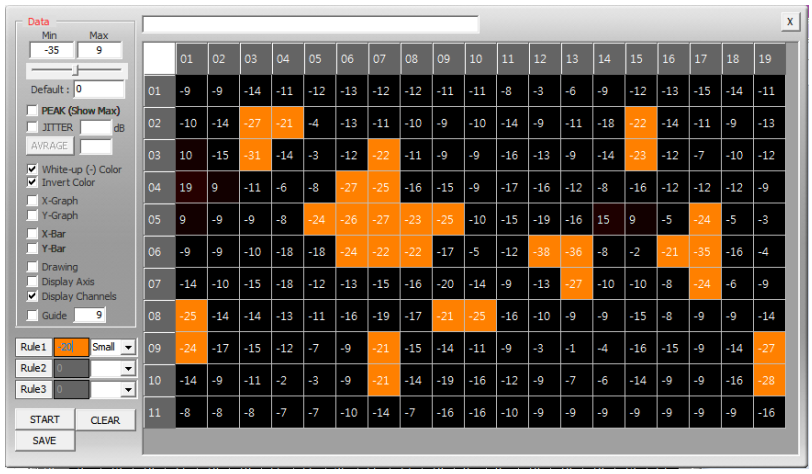
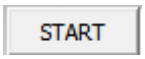
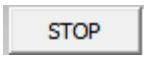
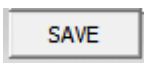


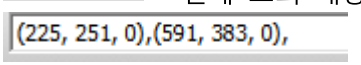
그림 9

c.  - Array 시작

 - Array 멈춤

d. - 표의 내용을 지움

e.  - 현재 표의 내용을 *.csv 로 저장

f.  터치된 좌표 출력

g. 칩에서 받은 각 Cell값의 Raw data를 표 형식으로 출력

2. AURORA 통신규약

2.1 Protocol Symbols

Symbol	Value	Description
SOH	0x01	Start-of-Header
EOT	0x04	End-of-Transmission
TAG_POSITION	0x01	Position information
TAG_DATA	0x02	Data mode
TAG_CHANNEL_1D	0x03	1-D Channel data value
TAG_CHANNEL_2D	0x04	2-D Channel data value
TAG_MESSAGE	0x40	Debug message output
TAG_CHANNEL_CONFIG	0x50	Configuration data (width-height)
TAG_SCREEN_CONFIG	0x51	Configuration data (width-height)

2.2 Command Set

Symbol	Description
set mode=[mode]	Set enable items to be transmitted. Bit 0: Position Bit 1: Data Bit 2: Channel 1D Bit 3: Channel 2D Bit 8: Debug Message Bit 12: Channel Config Bit 13: Screen Config
set pivot=[x],[y]	Set pivot position to be displayed.
set size=[width],[height]	Set window size to be displayed
run	Start transmission
stop	Stop Transmission
test[arg1],[arg2]	Send debug message [arg1],[arg2]

2.3 예시

Field	Size(byte)	Context	Description
SOH	1	0x01	Start of Header
DATA SIZE	2	0x0246	Size from 1st tag to last tag data
~DATA SIZE	2	0xFDB9	Inversion value of DATA SIZE
TAG_CHANNEL_CONFIG	1	0x50	Screen configuration value
TAG_SIZE	2	0x0006	
CHANNEL WIDTH	1	21	Horizontal channel size
CHANNEL HEIGHT	1	13	Vertical channel size
X PIVOT	1	0	X pivot position
Y PIVOT	1	0	Y pivot position
DISPLAY X SIZE	1	21	Horizontal channel display size
DISPLAY Y SIZE	1	13	Vertical channel display size
TAG_SCREEN_CONFIG	1	0x50	Screen configuration value
TAG_SIZE	2	0x0004	
SCREEN WIDTH	2	800	Horizontal pixel size
SCREEN HEIGHT	2	600	Vertical pixel size
TAG_POSITION	1	0x02	Touched point information
TAG_SIZE	2	0x0002	Size is 2 + 4 * n bytes
BytePerChannel	1	-	Byte per Channel
TouchCount	1	-	Number of touched point
KeyStatus	1	-	Key touched information
Touch1 X	2	-	1st touch X position
Touch1 Y	2	-	1st touch Y position
:	:	:	
TouchN X	2	-	Nth touch X position
TouchN Y	2	-	Nth touch Y position
TAG_CHANNEL_2D	1	0x04	2D matrix value of touch sensor nodes
TAG_SIZE	2	0x0222	X size * Y size (21 * 13 = 273 by 2-byte)
CHANNEL DATA	546	-	Channel node value
TAG_MESSAGE	1	0x40	Example message output
TAG_SIZE	2	18	
MESSAGE	18		"Test Message(###)"+NULL (for test)
Checksum	2	-	Checksum data from 1st tag to last tag data
EOT		0x04	End-of-Transmission

- Byte order is Big-endian data format