



## *Twincommunicator*

*I<sup>2</sup>C BUS Monitor and Video Signal Generator*

**Ver. 1.01**

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**Twin Communications of America, Inc.**

# 1. Basic Concept

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## 1) Production

When products based on I<sup>2</sup>C BUS stop functioning due to bus troubles, it is reasonable to expect the possibility of large production and financial damages.

**Timely recovery by finding and diagnosing the problem quickly is crucial.**

## 2) Repair, Services

As home appliances tend to become bigger in size in recent years, repair services must be performed directly on-site at customer's homes. Repairing or servicing products with I<sup>2</sup>C BUS requires specific equipment. **A simple and practical tool is necessary to be used at home.**

- Easy to carry and light weight
- Low power consumption (battery operated)
- Inexpensive



## 2. Basic Specifications

### <I<sup>2</sup>C BUS monitor>

I<sup>2</sup>C BUS Monitor supports **Master Mode** and **Slave Mode**

#### Slave Mode

##### ■ Data Logging

Data on I<sup>2</sup>C BUS can be recorded by setting up Slave-Address and Sub-Address.

#### Master Mode

##### ■ Setup specific registers

##### ■ Read status registers

##### ■ Read data on NVM (non-volatile-memory)

##### ■ Write data on NVM (non-volatile-memory)



### <Video signal generator>

Video signal generator built into I<sup>2</sup>C BUS Monitor can generate video patterns easily anywhere. This combined functionalities enables you to control I<sup>2</sup>C BUS and examine data efficiently as well.

This convenient features is a major advantage, particularly for field tests and services as you no longer need to carry multiple heavy equipments with you.

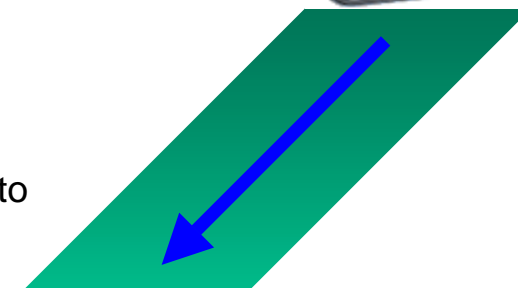
#### Video Signal Generator

##### ■ Generates 27 video patterns

##### ■ Supports custom video patterns

##### ■ Controls I<sup>2</sup>C BUS with monitoring signals

##### ■ Supports both NTSC and PAL

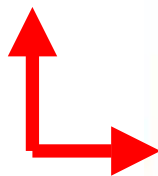


### 3. <Feature 1> Enables You to Store Data in Memory Stick



NVM contains important data related to results and setup. Effective reading and analyzing data on NVM on-site and off-site is very essential.

Twincommunicator enables you to read data on NVM and store them in Memory Stick. Twincommunicator enables you to write data from Memory Stick into NVM as well.



This feature allows you to store and reuse data easily. With the ability to store data on Memory Stick, you have the opportunity to further analyze the data recorded at customer's site at your office.

NVM R/W



Address: ▼ A0



```
0000: 7F 80 7B 7B 80 AC 05 FF
0008: 03 45 06 45 27 14 30 60
0010: 05 00 00 03 00 00 02 00
0018: 00 03 00 00 01 00 00 00
0020: 00 00 00 00 00 00 00 00
0028: 00 00 00 00 00 00 00 00
0030: 00 00 A0 FF FF 38 00 1F
```

Filename: i2c.....



## 4. <Feature 2> Easy to Use

### Easy and intuitive user interface

It has easy and intuitive user interface with touch panel and high density display (320 x 320 pixels). This results in drastic improvements in test efficiency and reductions of operational mistakes.

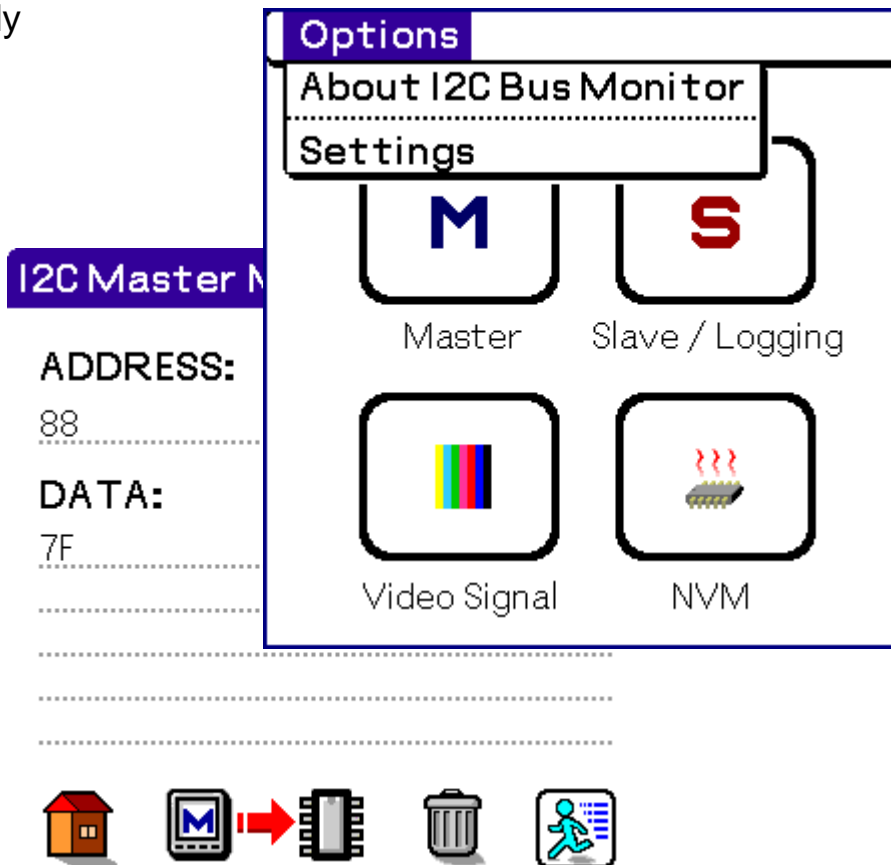
### Battery operated (available anywhere)

With 4 AA batteries, the product can run continuously for over 8 hours.

It does not require an AC power source.

### Lightweight

Small, lightweight and fits in your pocket.  
Can be used anywhere.



Options

About I2C Bus Monitor

Settings

M

Master

S

Slave / Logging

Video Signal

NVM

I2C Master M

ADDRESS:  
88

DATA:  
7F

Home icon, Monitor icon with red arrow, Chip icon, Trash icon, Person walking icon

## 5. <Feature 3> Video Signal Generator with Advanced Features

- **27 video patterns**

Supports 27 commonly used built-in video patterns.

- **Easy and intuitive interface**

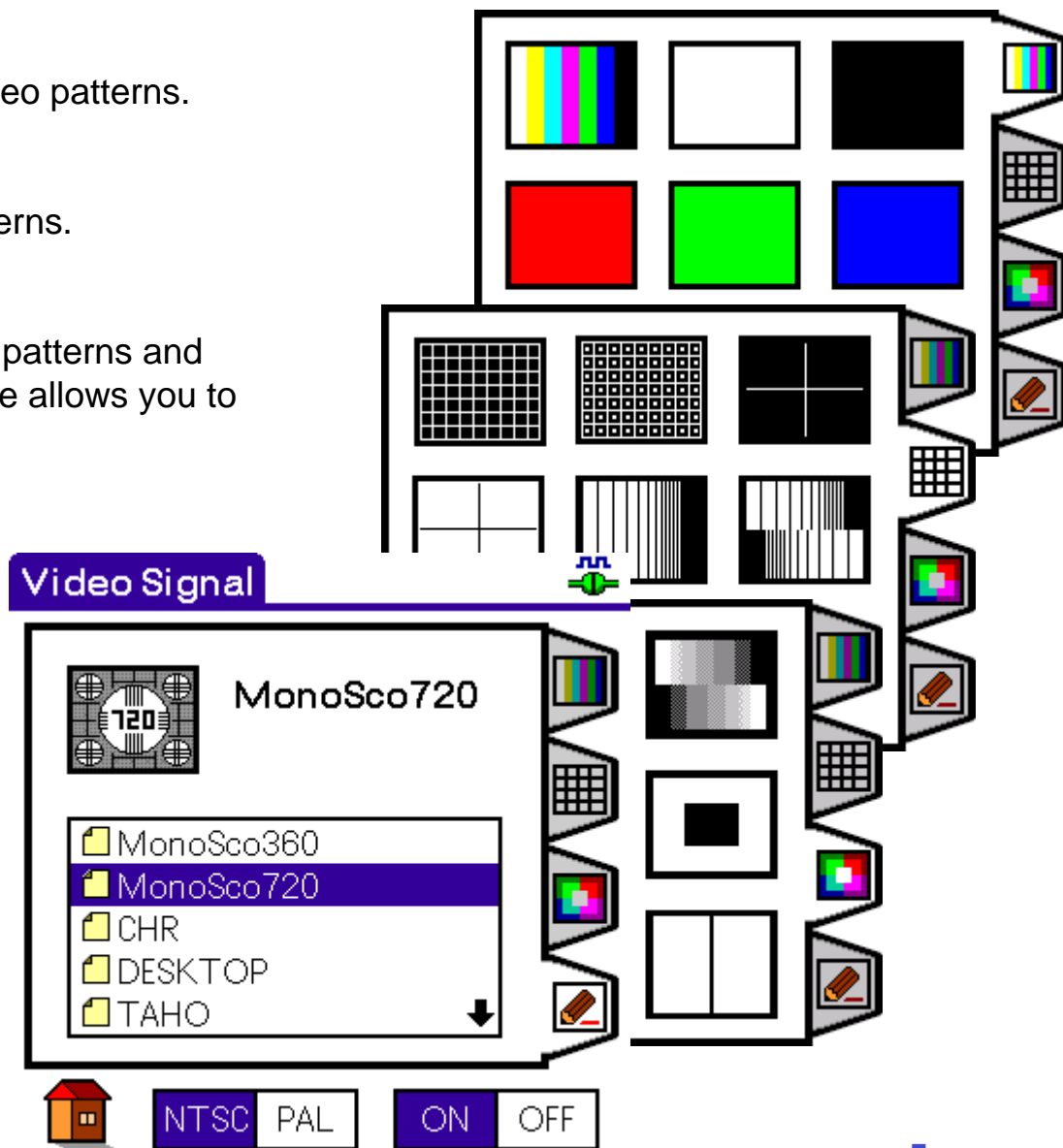
Simply tap icons to generate video patterns.

- **Creating original video patterns**

You can create your own custom video patterns and store them in Memory Stick. This feature allows you to create any kind of video patterns.

- **Supports both NTSC and PAL**

Generates both NTSC and PAL video signals.



## 6. <Feature 4> One Product with a Dual Role

The image displays two screenshots from the Twincommunicator software interface. The left screenshot shows the 'Video Signal' screen with a 'MonoSco720' component selected in a list. The right screenshot shows the 'NVM R/W' screen displaying a memory dump for address A0.

**Video Signal Screen:**

- Component: MonoSco720
- Listed items: MonoSco360, MonoSco720 (selected), CHR, DESKTOP, TAHO
- Settings: NTSC/PAL, ON/OFF

**NVM R/W Screen:**

- Address: A0
- Memory dump:

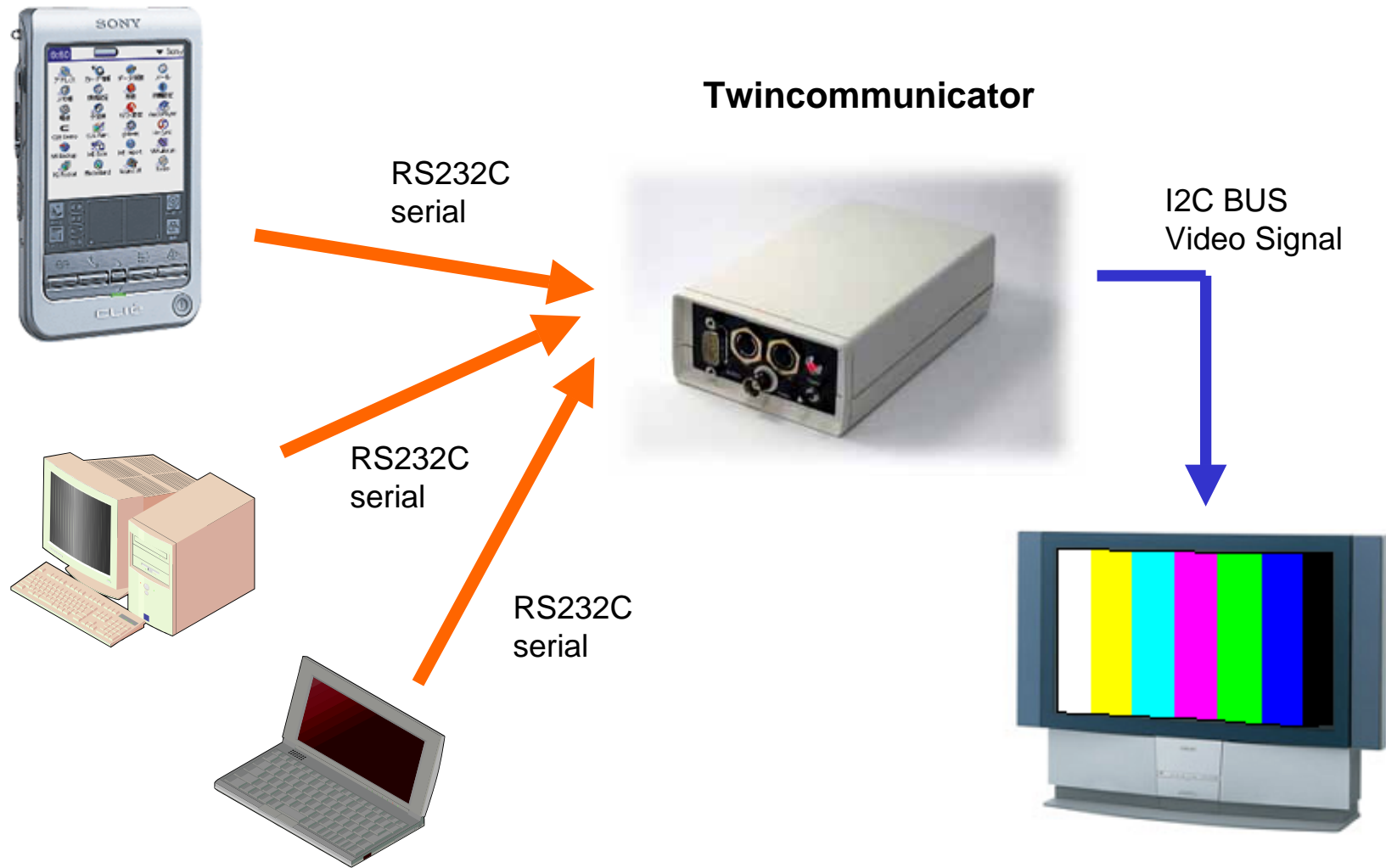
0000:	7F 80 7B 7B 80 AC 05 FF
0008:	03 45 06 45 27 14 30 60
0010:	05 00 00 03 00 00 02 00
0018:	00 03 00 00 01 00 00 00
0020:	00 00 00 00 00 00 00 00
0028:	00 00 00 00 00 00 00 00
0030:	00 00 A0 FF FF 38 00 1F

Filename: i2c.....

Twincommunicator has two features: video signal generator and I<sup>2</sup>C BUS monitor

It means that you can control I<sup>2</sup>C BUS and monitor test patterns at the same time. Such unique dual function is very convenient and useful for design, field test, and service engineers.

## 7. <Feature 5> Compatible with PC



Twincommunicator can be used with any PC equipped with serial port (RS232C).



# 8. Use Cases

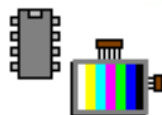


## Design, Examination, Trial Manufacture



- Examine TV sets during design phase
- Examine trial TV sets
- Collect data

## Demonstration, Product Explanation



- Control demonstration of I<sup>2</sup>C BUS products
- Generate built-in video patterns on display devices (LCD, etc.)

## Mass Production, Repair, Quality Control



- Test equipment for mass production
- Collect data for further statistical analysis during mass production
- Repair tools

## Services, Field Test



- Can be used anywhere
- Find problems and collect data at client site

