

Nintendo DSi Software Development Support Tools

IS-TWL Tools Catalog

2009/03/16

IS-TWL-DEBUGGER

IS-TWL-CAPTURE

IS-TWL-MIDI

IS-NITRO-WRITER+TWL OPTION

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1 Overview

The IS-TWL development support tools have been customized for developing software on Nintendo DSi. As such, not only are they highly compatible with the development environment provided by Nintendo, but because the interfaces for these tools are consistent with the existing IS-NITRO set of development tools for the Nintendo DS, they are easy to use and permit smooth migration.

2 Product List

Table 2-1 Product List

Product Option *1	Description	Price (tax not included)	Section
Software Development Support Tools			
IS-TWL-DEBUGGER	Software development tool for Nintendo DSi.	268,000 yen	3.1
CAPTURE Option (IS-TWL-DEBUGGER)	IS-TWL-DEBUGGER has added a feature for LCD video output for images and sound. *2	50,000 yen	3.1.6
WIRED Option (IS-TWL-DEBUGGER)	This option allows IS-TWL-DEBUGGER to perform wireless communications with a cable connection.	50,000 yen	3.1.7
Tools for Outputting Video, Incorporating LCD Screens			
IS-TWL-CAPTURE (Development Card Support)	This tool is to output video that incorporates sound and liquid crystal display (LCD) images. *2 A TWL development card is required to execute the TWL software. Commercial TWL cards will not work.	208,000 yen	3.2
IS-TWL-CAPTURE (Commercial Card Support)	This tool is to output video that incorporates sound and LCD images. *2 Works only with commercial cards. It will not operate with development cards.	208,000 yen	3.2
WIRED Option (IS-TWL-CAPTURE)	This option allows IS-TWL-CAPTURE to perform wireless communications with a cable connection.	50,000 yen	3.2.6
Development Card Writing Tools			
TWL Development Card-Supported Gang Writer	This gang writer supports writing up to eight TWL development cards simultaneously. *3 This is a set product that adds the TWL option to IS-NITRO-WRITER.	248,000 yen	3.3
IS-NITRO-WRITER	This gang writer supports writing up to eight DS development cards simultaneously. *3	198,000 yen	3.3.1
TWL Option (IS-NITRO-WRITER)	By adding this option to an existing IS-NITRO-WRITER, it can support writing to TWL development cards.	50,000 yen	3.3.2
BACKUP Option (IS-NITRO-WRITER)	This IS-NITRO-WRITER option allows data to be written to and loaded from a backup device.	50,000 yen	3.3.3
Sound Development Support Tools			
IS-TWL-MIDI	This adapter allows a MIDI device to connect to IS-TWL-DEBUGGER.	30,000 yen	3.4

*1 Option orders are accepted when ordering. To add options after purchase, you must return the product.

*2 When outputting video, use the Wii-dedicated AV cable (sold separately).

*3 Purchase the Development Card separately from Nintendo.

3 Product Description

3.1 IS-TWL-DEBUGGER

IS-TWL-DEBUGGER is a development tool for developing Nintendo DSi software. It supports development with full features, such as source-level debugging, hardware breakpoints, and high-speed software download.

In addition, developers can use both the CAPTURE option, which allows liquid crystal display (LCD) video output for incorporating still images, video, and sound; and the WIRED option, which allows wireless communication over a cable connection.

3.1.1 Full Debugging Features to Improve Development Efficiency

IS-TWL-DEBUGGER provides full support, giving you all the debugging features necessary to develop Nintendo DSi software.

- Source-level debugging (assembler-level is also possible)
- Overlay debugging
- Dynamic library debugging
- Hardware breakpoints
- Print debug
- Standard implementation of 4 gigabits of emulation memory
- 32 megabytes of main memory, twice that of Nintendo DSi
- Support for backup devices (DS sub-cards) (requires a development card or a DS sub-joint card)
- Battery emulation that reproduces remaining battery charge and plugging/unplugging of the AC Adapter

Because the hardware inherits its operations and control from IS-NITRO-DEBUGGER, migration from IS-NITRO-DEBUGGER works smoothly.

3.1.2 High-Speed Software Downloads

To triple your download speed (as compared to the existing IS-NITRO-DEBUGGER), uses USB 2.0 (high-speed) for interfacing with the computer.

3.1.3 Support for Writing to Development Cards

The TWL development hardware supports writing to development cards. Use the ability to write to a development card to immediately verify program behavior.

3.1.4 Control with the Same Feel as the Nintendo DSi

The IS-TWL-DEBUGGER provides controllers that look and act just like the Nintendo DSi, enabling you to operate the development hardware as you would the Nintendo DSi.

3.1.5 Wireless Communication Functionality Implemented as Standard

Wireless communication is a standard feature, allowing you to develop software that uses wireless communication.

3.1.6 CAPTURE Option (IS-TWL-DEBUGGER)

The CAPTURE option adds features to load LCD images and sound as PC and video output to a television.

- Capture feature

This feature captures the content of the two LCD screens to the computer as still images or video, then saves them in the file formats below.

- Still images: BMP files
- Video (including sound): AVI files
- Sound only: WAV files

A dedicated USB interface for capture is available, so images can be captured without affecting debugging.

- Video output feature

Because LCD images can be output as video, they can be displayed on a television or recorded by a video recorder. The two available video outputs allow a high level of control over what you can do with the video output.

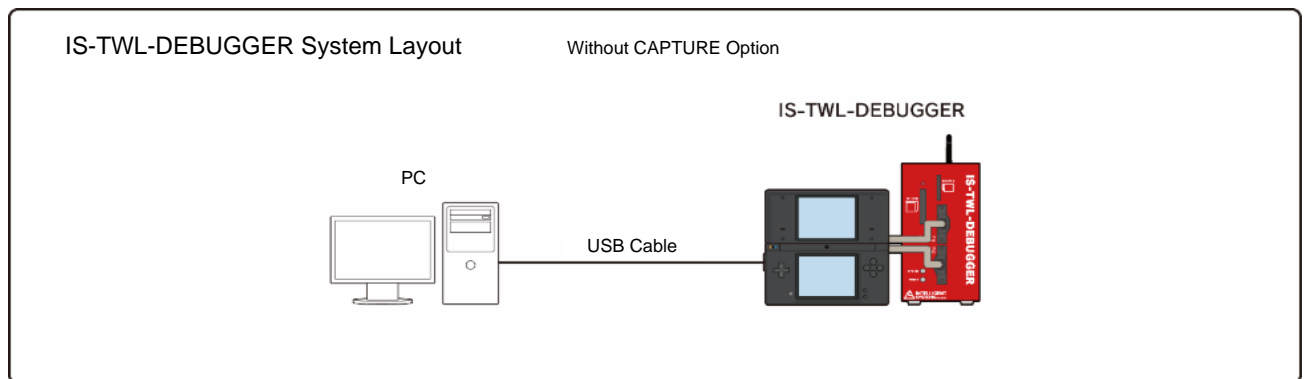
- The two LCD screens can be output separately and displayed on two different televisions. This is especially appropriate when displaying a detailed image.
- You can output as one image by lining up the images from the two LCD screens. Use when recording with a video recorder.
- Because output video images can be rotated, the LCD screens can be placed sideways, as when the Nintendo DSi is held lengthwise.
- The LCD images that are output as video can be freely moved, expanded, or shrunk.

The CAPTURE option does not include an AV cable. Purchase one or more of the following Wii AV cables according to the number of televisions and the type of ports they have.

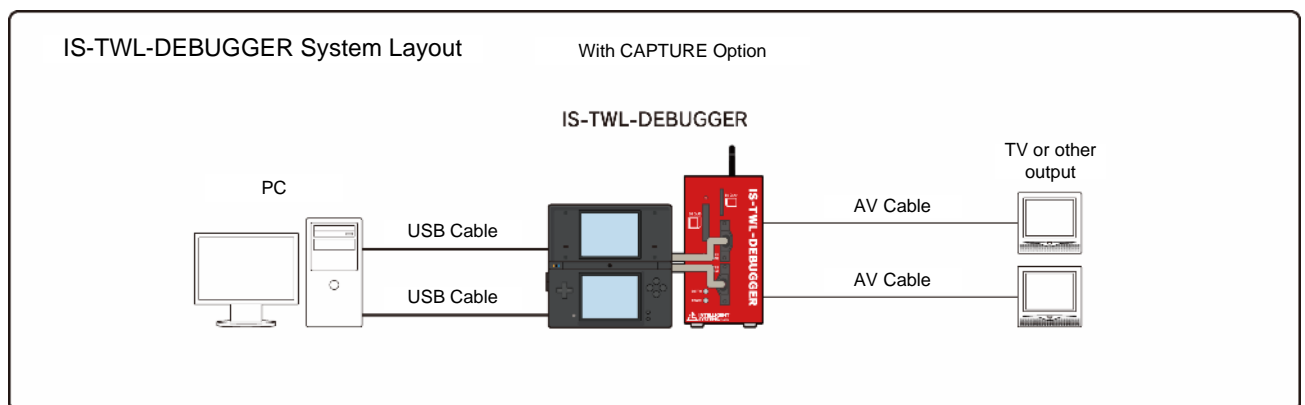
- ACC, AV Stereo Cable RVL-WCS (NOA Part Number 62604)
- ACC, Component Cable RVL-USZ (NOA Part Number 62166)

3.1.7 WIRED Option (IS-TWL-DEBUGGER)

The WIRED option allows wireless communication over a cable connection, reducing the effects of other nearby wireless devices and providing more stable communications. This option also reduces the effects on other nearby wireless devices. Alternatively, you can perform wireless communications by attaching the included antenna to IS-TWL-DEBUGGER.



Note: Computer not included.



Note: Computer, AV cables, and TVs not included. Use the Wii AV cables made by Nintendo.

3.1.8 Operation Environment

Table 3-1 IS-TWL-DEBUGGER Operation Environment Requirements

Item	Description
Computer	PC/AT compatible
Operating system	The following operating systems are supported: <ul style="list-style-type: none"> Microsoft Windows Vista, Service Pack 1 or later (32-bit version) Microsoft Windows XP, Service Pack 2 or later (32-bit version)
Memory capacity	As recommended by the operating system or greater Depending on the scope of the development project, more memory may be required.
Disc capacity	50 megabytes or more of free space
Disc drive	Can load a CD-ROM for installation
Display	XGA with 1024x768 pixels or greater
USB interface	1 port (2 ports when installing CAPTURE option) To perform high-speed downloads or video capture, USB 2.0 (high-speed) is recommended.

3.1.9 Product Specifications

Table 3-2 IS-TWL-DEBUGGER Product Specifications

Item		Description
Emulation memory		4 gigabits
Main memory		32 MB
External dimensions	Main portion	86 (width) x 254 (depth) x 165 (height) mm (omitting protrusions)
	Controller	137 (width) x 75 (depth) x 27 (height) mm (folded), 50 cm controller cable
Weight	Main portion	About 1.9 kg (2.1 kg when CAPTURE option is installed)
	Controller	About 0.3 kg
Usage environment		10–40 degrees Celsius (with no condensation)
Bundled items		AC Adapter: 1; USB Cable: 1 (2 when CAPTURE option is installed); Antenna: 1; Stylus: 1
Miscellaneous		RoHS compliant

3.2 IS-TWL-CAPTURE

The IS-TWL-CAPTURE tool loads LCD images and sound to a computer. Because these images can be output to video, they can also be output to a television or recorded with a video recorder.

There are two types of IS-TWL-CAPTURE: one supports development cards, the other supports commercial cards. Use the type appropriate for your requirements.

3.2.1 Capture Feature

This feature loads the content of the two LCD screens to the computer as still images or video, and saves them in the file formats below.

- Still images: BMP files
- Video (including sound): AVI files
- Sound only: WAV files

3.2.2 Video Output Feature

Because LCD images can be output as video, they can be displayed on a television or recorded by a video camera. Two video outputs are available, and various video outputs can be supported.

- The two LCD screens can be output separately and displayed on two different televisions. This is especially appropriate when displaying a detailed image.
- You can output as one image by lining up the images from the two LCD screens. Use when recording with a video recorder.
- Because output video images can be rotated, the LCD screens can be placed sideways, as when the Nintendo DSi is held lengthwise.
- The LCD images that are output as video can be freely moved, expanded, or shrunk.

The IS-TWL-CAPTURE tool does not include an AV cable. Purchase one or more of the following Wii AV cables according to the number of televisions and type of ports they use.

- ACC, AV Stereo Cable RVL-WCS (NOA Part Number 62604)
- ACC, Component Cable RVL-USZ (NOA Part Number 62166)

3.2.3 Control with the Same Feel as Nintendo DSi

The IS-TWL-CAPTURE provides controllers that look and act just like Nintendo DSi, enabling you to operate the development hardware as you would Nintendo DSi.

3.2.4 Wireless Communication Functionality Implemented as Standard

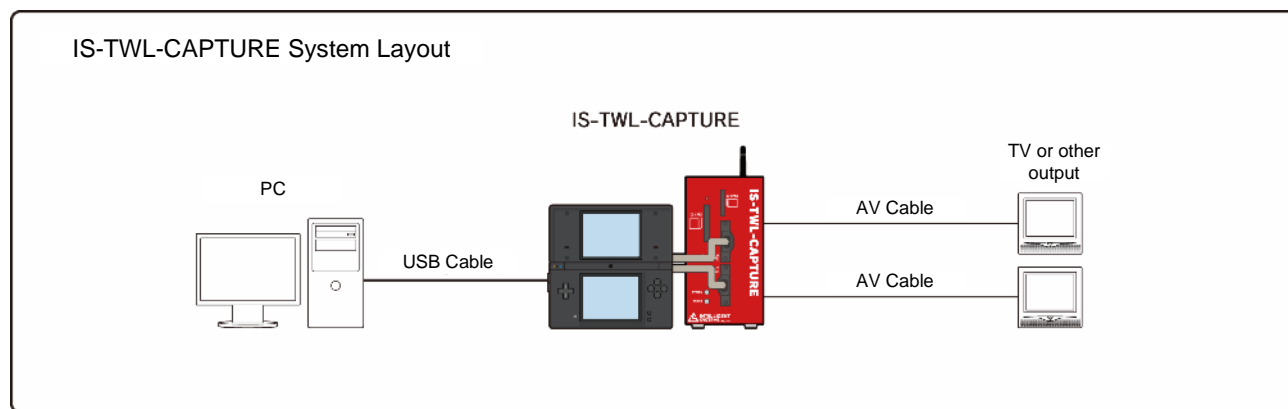
Wireless communication is a standard feature, allowing you to develop software that uses wireless communication.

3.2.5 Video Output with the IS-TWL-CAPTURE Hardware Alone

Because the contents of the LCD screens can be output as images without connecting the IS-TWL-CAPTURE hardware to a computer, you can use this hardware for shows and presentations.

3.2.6 WIRED Option (IS-TWL-CAPTURE)

The WIRED option allows wireless communication over a cable connection. This option is useful to implement stable wireless communication in locations where there is an abundance of wireless communication occurring, such as at exhibition sites. You can also perform wireless communications by attaching the included antenna.



Note: Computer, AV cables, and TVs not included. Use the Wii AV cables made by Nintendo.

3.2.7 Operation Environment

Table 3-3 IS-TWL-CAPTURE Operation Environment Requirements

Item	Description
Computer	PC/AT compatible
Operating system	The following operating systems are supported: <ul style="list-style-type: none"> Microsoft Windows Vista, Service Pack 1 or later (32-bit version) Microsoft Windows XP, Service Pack 2 or later (32-bit version)
Memory capacity	As recommended by the operating system or greater Depending on the usage environment, more memory may be required.
Disc capacity	50 MB or more of free space
Disc drive	Can load a CD-ROM for installation
Display	XGA display with 1024x768 pixels or greater
USB interface	1 port. To perform video capture, USB 2.0 (high-speed) is recommended.

3.2.8 Product Specifications

Table 3-4 IS-TWL-CAPTURE Product Specifications

Item		Description
Main memory		16 MB
External dimensions	Main portion	86 (width) x 254 (depth) x 165 (height) mm (omitting protrusions)
	Controller	137 (width) x 75 (depth) x 27 (height) mm (folded), 50 cm controller cable
Weight	Main portion	Approximately 1.9 kg
	Controller	Approximately 0.3 kg
Usage environment		10–40 degrees Celsius (with no condensation)
Bundled items		AC Adapter: 1; USB Cable: 1; Antenna: 1; Stylus: 1
Miscellaneous		RoHS compliant

3.3 Gang Writer with TWL Development Card Support

This development tool is IS-NITRO-WRITER with an added option for supporting TWL development cards. Gang Writer supports writing to TWL development cards and existing Nintendo DS development cards. Gang Writer supports writing to up to eight TWL development cards simultaneously and can be used when multiple development cards must be prepared for debugging or other activities.

3.3.1 Support for Writing Eight Cards Simultaneously

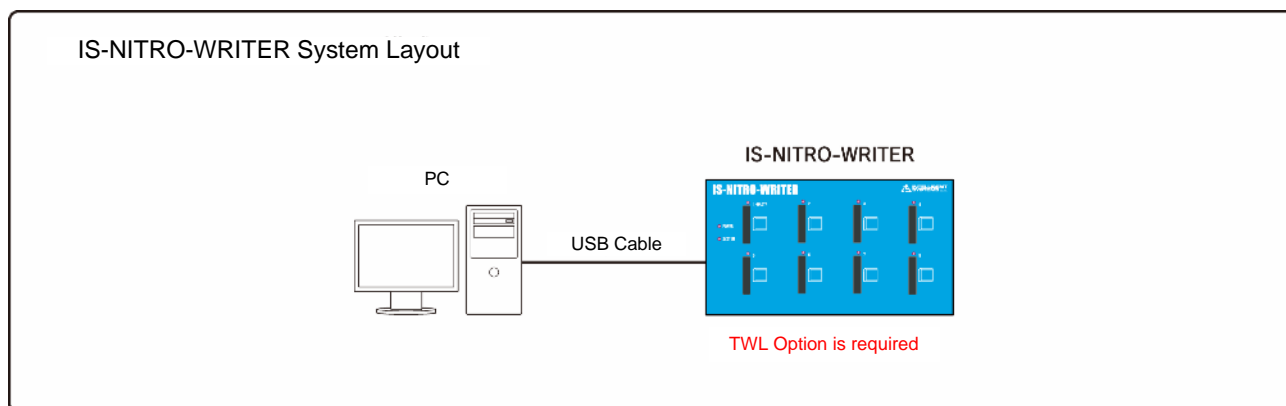
The IS-NITRO-WRITER tool can write software to up to eight inserted development cards simultaneously.

3.3.2 TWL Option (IS-NITRO-WRITER)

The TWL option allows an existing IS-NITRO-WRITER to support the TWL development card. This option is required when using TWL development cards with IS-NITRO-WRITER.

3.3.3 BACKUP Option (IS-NITRO-WRITER)

The BACKUP option provides the ability to write to up to eight backup devices (DS sub-cards) simultaneously and read from one backup device.



Note: Computer not included.

3.3.4 Operation Environment

Table 3-5 IS-NITRO-WRITER Operation Environment Requirements

Item	Description
Computer	PC/AT compatible
Operating System	The following operating systems are supported: <ul style="list-style-type: none"> Microsoft Windows Vista, Service Pack 1 or later (32-bit version) Microsoft Windows XP, Service Pack 2 or later (32-bit version)
Memory Capacity	As recommended by the operating system or greater
Disc Capacity	20 MB or more of free memory
Disc Drive	Can load a CD-ROM for installation
Display	SVGA display with 800x600 pixels or greater
USB Interface	1 port. USB 2.0 (high-speed) recommended.

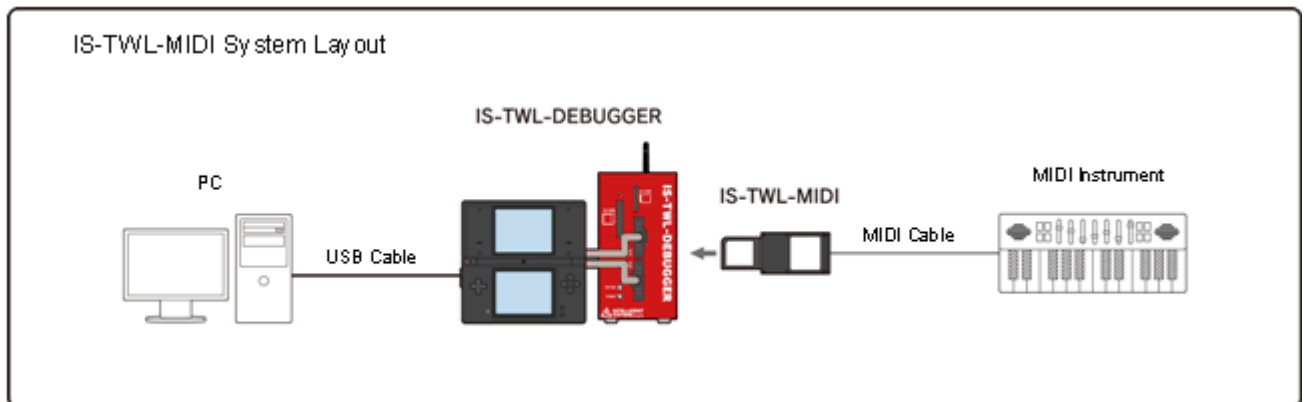
3.3.5 Product Specifications

Table 3-6 IS-NITRO-WRITER Product Specifications

Item	Description
External Dimensions	260 (width) x 141 (depth) x 126 (height) mm (omitting protrusions)
Weight	Approximately 2.4 kg
Usage Environment	10–40 degrees Celsius (with no condensation)
Bundled Items	AC Adapter: 1; USB Cable: 1
Miscellaneous	RoHS compliant

3.4 IS-TWL-MIDI

The IS-TWL-MIDI tool is a development tool for supporting the creation of sound effects or music. By connecting this with IS-TWL-DEBUGGER and using it together with the sound tool included with TWL-System provided by Nintendo, sound effects and musical expressions can be confirmed on the Nintendo DSi internal sound source.



Note: Computer, USB cable, IS-TWL-DEBUGGER, MIDI cable, and MIDI instrument not included. Use a MIDI cable that is commercially available.

3.4.1 Product Specifications

Table 3-7 IS-TWL-MIDI Product Specifications

Item	Description
External Dimensions	43 (width) x 113 (depth) x 25 (height) mm
Weight	Approximately 43 g
Usage Environment	10–40 degrees Celsius (with no condensation)
Miscellaneous	RoHS compliant

4 Compatibility List

Tables 4-1 and 4-2 detail the compatibility of development tools and production units with cards for startup and writing.

Table 4-1 Compatibility List for Startup

Device		Startup					
		Commercial Card		Development Card			
		TWL Exclusive/ Compatible Card	DS Card	TWL Development Card		DS Development Card	
		TWL Exclusive/ Compatible Software	DS Software	TWL Exclusive/ Compatible Software	DS Software	TWL Exclusive/ Compatible Software	DS Software
TWL	IS-TWL-DEBUGGER	X	X *1	▲	▲	X	▲
	IS-TWL-CAPTURE (Development Card Support)	X	O	O	O	X	O
	TWL Test Unit						
	IS-TWL-CAPTURE (Commercial Card Support)	O	O	X	X	X	X
	TWL Commercial Hardware						
NITRO	IS-NITRO-EMULATOR	X					
	IS-NITRO-WRITER						
	IS-NITRO-CAPTURE	Δ	O	Δ	O	X *2	O
	IS-NITRO-VIDEO						
	NITRO Commercial Hardware						

Table 4-2 Compatibility List for Writing

Device		Writing				Comments
		Development Card				
		TWL Development Card		DS Development Card		
		TWL Exclusive/ Compatible Software	DS Software	TWL Exclusive/ Compatible Software	DS Software	
TWL	IS-TWL-DEBUGGER	O	O	X	O	
	IS-TWL-CAPTURE (Development Card Support)	X				
	TWL Test Unit					
	IS-TWL-CAPTURE (Commercial Card Support)					
	TWL Commercial Hardware					Nintendo DSi
NITRO	IS-NITRO-EMULATOR	X	O *3	X	O	
	IS-NITRO-WRITER	O *4	O *4	X	O	
	IS-NITRO-CAPTURE	X				
	IS-NITRO-VIDEO					
	NITRO Commercial Hardware					Nintendo DS/DS Lite

△ When TWL software is supported, works only with DS programs. For TWL-exclusive software, only a message screen is displayed.

▲ Operations are guaranteed for the following flash cards.

- Card, 4G Flash ROM TWL (NOA Part Number 67596)
- Card, NTR 512M Flash ROM (NOA Part Number 55484)
- Card, NTR 1GBIT Flash ROM-DEV (NOA Part Number 58173)
- Card, NTR 2G Flash ROM Spansion (NOA Part Number 63691)

*1 Operations are not guaranteed.

*2 Debugging with this combination is prohibited.

*3 Currently not supported; however, support is planned. Writing in excess of 2 gigabits requires expansion of the IS-NITRO-EMULATOR emulation memory.

*4 Requires that the TWL option be added to IS-NITRO-WRITER.

* This support chart does not guarantee operations for cards released after October 2008.

5 Retailer

Questions about the IS-TWL series should be directed to the following retailer.

Nintendo of America Inc.

Development Parts

12521 128th Lane NE, Suite B

Kirkland, WA 98034

Phone:

- 1-800-531-4048 (US-only)
- 1-425-861-2038 (international)

E-mail:

- Developmentparts@noa.nintendo.com (sales)
- support@noa.com (support)

6 Support

Nintendo supports IS-TWL series users with a website and by e-mail.

6.1 Website

Licensed users can download the latest software versions and get more information from <http://www.warioworld.com>.

6.2 Support Contact

For technical questions regarding the IS-TWL series or for repair concerns, please contact support@noa.com.

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