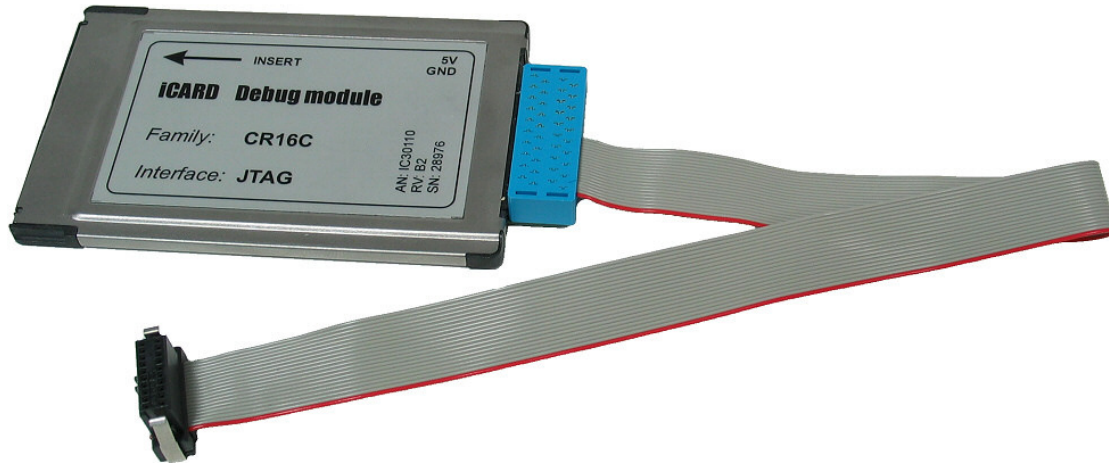

Hardware Reference

CR16C family iCARD Debug module

Ordering codes	IC30110
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Thank you for purchasing this product from iSYSTEM. This product has been carefully crafted to satisfy your needs. Should any questions arise, do not hesitate to contact your local distributor or iSYSTEM directly. Our technical support personnel will be happy to answer all your technical support questions.

All information, including contact information, is available on our web site www.isystem.com. Feel free also to explore our alternative products.

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Hardware Reference

iCard General Notes

The iC3000 support a wide range of serial debug interfaces like Motorola's Background Debug Mode (BDM), the Serial Debug Interface (SDI) and the On-Chip Emulation (OnCE) interface. JTAG based debug interfaces are also supported by these Emulators. For each specific debug interface a special iCARD is available.

The iCARD is a PCMCIA-style interface card which contains all necessary adaptations including the target interface cable for a selected serial debug interface. The iCARD plugs into the PCMCIA-style card slot of the iC3000 unit. Features like on-chip-, in-system programming and programming voltage generation are standard features.

Note: Whenever connecting to the target both target and the Emulator must be switched off. The Emulator is first switched on, and the target right afterwards. Note that otherwise during connecting the target a massive current spike may flow during static discharge or ground potential equalization.

When not in use, the iCARD should be kept in its protective antistatic bag to ensure its dependability and keep the 68-pin PC-Card connector clean.

The iCard is a delicate piece of equipment. Always handle it with care, make sure not to bend it or deform it in any way, to keep it clean, etc. If these instructions are not followed, damage to the iCard or the Emulator can occur.

Temperature range

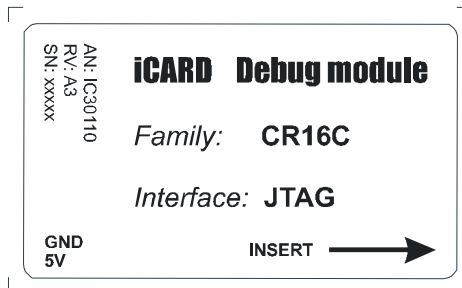
All iSYSTEM devices, unless explicitly otherwise noted, are specified to operate at room temperatures (specifically, between 10°C/50°F and 40°C/105°F).

Hardware Reference

CR16C family iCARD

Ordering code	IC30110
Dimensions (WxLxH, mm)	54x84x5

Supported CPU cores
CR16C



For the latest list of supported cores and devices, please check with your local iSYSTEM distributor.

The following pinout is valid on the target side:

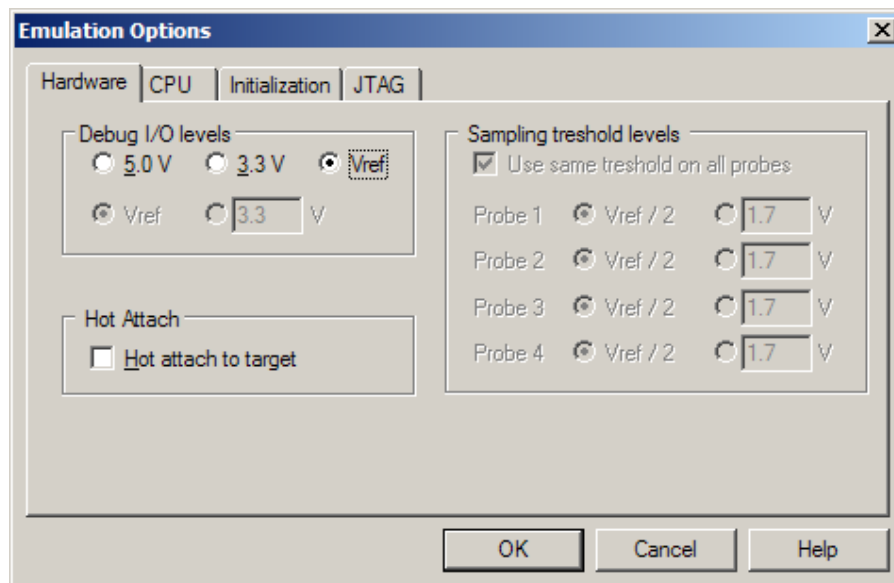
Signal direction	Signal description	Signal	Pin	Pin	Signal	Signal description	Signal direction
In/Out	System Reset	RESET	1	2	VTref	Reference voltage	Input
	Not used	n.c.	3	4	GND	Ground	
Output	Standard JTAG	nTRST	5	6	GND	Ground	
Output	Standard JTAG	TMS	7	8	GND	Ground	
Output	Standard JTAG	TDI	9	10	GND	Ground	
Output	Standard JTAG	TCK	11	12	GND	Ground	
Input	Standard JTAG	TDO	13	14	GND	Ground	
	Not used	n.c.	15	16	GND	Ground	
	Not used	n.c.	17	18	GND	Ground	
	Not used	n.c.	19	20	n.c.	Not used	

AMPMODU System 20 Target debug connector

Power Supply

When 'Vref' Debug I/O level is selected, a voltage applied to the belonging reference voltage pin on the target debug connector is used as a reference voltage for voltage follower, which powers buffers, driving the debug JTAG signals. The user must ensure that the target power supply is connected to the Vref pin on the target JTAG connector and that it is switched on before the debug session is started. If these two conditions are not met, it is highly probably that the initial debug connection will fail already. However in some cases it may succeed but the system may function unstable.

'Vref' setting should be used for target voltages from 1.8V and up to 3.3V while for 5V target voltage, '5.0V' setting is recommended.



Power Supply Selection

Troubleshooting

Please, read the technical notes document for this architecture first. Some help may also be found at www.isystem.com under Support->FAQs.

Important iCard information

Note the direction in which the iCARD is inserted into the iCARD slot. The side with the label is the top side; the arrow shows the direction in which the iCARD should be inserted.

Hot Attach

Hot Attach allows attachment of the debugger to a running target system without affecting its operation. Refer to the Technical Notes document for this particular architecture for more details on Hot Attach use and necessary winIDEA configuration.

Hardware Considerations

When using Hot Attach make sure that Emulator GND and Target GND are connected before the debug iCARD cable is connected to the target debug connector. The debug iCARD can be damaged if this connection is not established prior to applying the power to the emulator and the target.

Before applying the power to the target and the emulator, take a grounding wire (shipped with ic3000 HS/GT) and connect it to the target GND. On the other side, connect it to the emulator. The iC3000 HS/GT emulator has GND pin available in the corner at the front side.

Next, insert the iCARD into the emulator, switch on the emulator and then apply the power to the target.

The target should be running now and ready for Hot Attach..

winIDEA Configuration

- Check the 'Hot attach to target' option in the 'Hardware/Emulation Options/Hardware' tab.
- Execute Download debug command.
- Connect the debug iCARD cable to the target system
- Select the 'Attach' debug command in the 'Debug' menu to attach to the target system.
- Now, the debugger should display run status and the application can be stopped and debugged if necessary.

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