RoBoard RB-100/RB-110 Console Redirection How-To

DMP Electronics Inc Robotic Division Aug 2010

About RoBoard's Console Redirection Function

- When Console Redirection is enabled, RoBoard will redirect text screens (such as BIOS & DOS screens) to one of its native COM ports.
- By Console Redirection, you are able to manipulate RoBoard (of no VGA card) on any PC with serial (RS232) ports.
 - Note that Console Redirection will become invalid if RoBoard boots into WinXP, Linux, or any protected-mode OS.



Hardware Requirement

- RoBoard RB-100/RB-110
- Any PC with serial (RS232) ports



How to Enable RoBoard Console Redirection

Method 1 (by BIOS)

 STEP 1: In BIOS, go to Advanced → Remote Access Configuration



Method 1 (by BIOS)

STEP 2: Set "Remote Access" as [Enabled]



In this BIOS menu, you can also set the COM port that redirects the console.

Method 1 (by BIOS)

• STEP 3: Save and exit the BIOS

Configure Remot	e Access type	e and parameters	Options
lemote Access		[Enabled]	Disabled Enabled
erial port mum Base Addre	ber ss, IRQ	(COM1) (3F8h, 4)	
erial Port No low Control edirection Af erninal Type T-UTF8 Combo redir Memory			
edirection Af erninal Type T-UTF8 Conbo redir Menory	Save config	guration changes and	exit setup? ell

Method 2 (by H/W switch)

 Just turn Console Redirection switch to "Console Redirection enable" (see also H/W introd. Slide)



Note: The COM port (& baudrate) to redirect the console is set in BIOS (see the previous Method 1 pictures).

Remarks

- Console Redirection Function will occupy the COM port that is set to redirect the console (default COM1 at 115200bps).
- Console Redirection is valid only for Real Mode and the 80×25 text mode.
 - i.e., it doesn't work for any protected-mode OS and any graphic-mode DOS program.
- The Method 2 (H/W switch method) doesn't work on some early RB-100.

Connect PC to RoBoard via Console Redirection

(Use WinVista & PuTTY as an example)

STEP 1: Download PuTTY

• Download PuTTY from :

http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

For Windows on Intel x86							
PuTTY:	putty.exe	(or by FTP)	(RSA sig)	(DSA sig)			
PuTTYtel:	puttytel.exe	(or by FTP)	(RSA sig)	(DSA sig)			
PSCP:	pscp.exe	(or by FTP)	(RSA sig)	(DSA sig)			
PSFTP:	psftp.exe	(or by FTP)	(RSA sig)	(DSA sig)			
Plink:	plink.exe	(or by FTP)	(RSA sig)	(DSA sig)			
Pageant:	pageant.exe	(or by FTP)	(RSA sig)	(DSA sig)			
PuTTYgen:	puttygen.exe	(or by FTP)	(RSA sig)	(DSA sig)			

STEP 2: Configure PuTTY Serial Settings

• STEP 2.1: Launch PuTTY

- Session	Basic options for your PuTTY session			
Logging Terminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Data Proxy Telnet	Specify the destination you want t Host Name (or IP address) Connection type: Raw Telnet Rlogin Load, save or delete a stored sess Saved Sessions Default Settings	o connect to Port 22 SSH Serial sion Load Save Delete		
€ SSH Serial	Close window on exit: Always Never O	Inly on clean exit		

STEP 2: Configure PuTTY Serial Settings

- STEP 2.2: Set the correct serial configuration
 - Select your PC's serial port that will connect to RoBoard (COM5 in this example).
 - The buadrate, data/stop bits, parity, and flow control settings should coincide with RoBoard's consoleredirection port.
 - The default settings of RoBoard's console-redirection port are 115200 bps, 8 data bits, 1 stop bit, no parity and no flow control.

STEP 2: Configure PuTTY Serial Settings

Category:			DC's seriel red		
E Session	Options controlling	local serial lines	PU's serial port		
Logging Terminal Keyboard Bell Features Window Appearance	Select a serial line Serial line to connect to Configure the serial line Speed (baud)	COM5	Configure Remote Access typ	e and parameters	
 Behaviour Translation Selection Colours Connection Data Proxy Telnet Rlogin SSH 	Data bits Stop bits Parity Flow control	8 1 None	Remote Access Serial port number Base Address, INA Serial Port Mode Flow Control Redirection After BIOS POST Terminal Type VT-UTF8 Combo Key Support Sredir Memory Display Delay	[Enabled] [COM1] [3F8h, 4] [115200 8,n,1] [None] [Always] [Always] [ANSI] [Enabled] [No Delay]	
About		Open Cancel	F	RoBoard BIOS settings	

STEP 3: Connect Serial Ports of Your PC and RoBoard



STEP 4: Open PuTTY Serial Connection

 Constant Constant<	Basic options for your PuTTY session			
	Specify the destination you want Serial line COM5 Connection type:	t to connect to Speed 115200		
	Load, save or delete a stored se Saved Sessions	ession		
	Default Settings	Load Save Delete		
	Close window on exit:	Only on clean exit		

STEP 5: Power on RoBoard

 Power on RoBoard; then you will see the RoBoard boot screen in PuTTY.



STEP 5: Power on RoBoard

• You can then press "F4" key of your PC (in the boot screen) to enter RoBoard BIOS and manipulate it.

🛃 сом5 -	Putty	-	-			-			X
Main	Advanced	PCIPnP	Boot	Security	Chips	set	Exit		-
*******	*********	*******	******	*********	******	******	******	******	***
* System	Overview				*				*
* ******	**********	********	******	**********	**** *				*
* Process	sor				*				*
* Vortex8	36DX A9121				*				*
* Speed	:933MHz				*				*
*					*				*
* System	Memory				*				*
* Size	:256MB				*				*
* Speed	:300MHz				*				*
*			_		*				*
* System	Time		[10:5	5:22]	*				*
* System	Date		[Fri	08/08/2008]	*				*
*					*	** 2	Select So	creen	*
*					*	** 2	Select It	tem	*
*					* -	+- (Change Fi	ield	*
*					*	Tab S	Select Fi	ield	*
*					*]	F1 (General H	lelp	*
*					*]	F10 S	Save and	Exit	*
*					*]	ESC I	Exit		*
*					*				*
*******	*******	*******	******	********	******	*****	*******	******	***
	v02.58 (0	C)Copyright	1985-2	009, America	an Megat	trends,	Inc.		
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								and the second second	

STEP 5: Power on RoBoard

 Alternatively, you can press "F3" key of your PC to select RoBoard boot device.



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THANK YOU

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