

# Type1GC Evaluation Board AT Command (USB) Quick Start Guide

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# **Revision History**

<b>Revision Number</b>	Release Date	Comments	
Revision A	2020/03/31	Initial	
Revision B	2020/06/11	Change Chapter 4 image	
Revision C	2020/06/30	Added description of UART usage	
		1.1 Purpose and Scope	
Revision D	2020/07/28	Change to the USB procedure	
		1.1Purpose and Scope	
		3 Prerequisites	
		In this guide, it is assumed that you have applied the patch file	
		provided by Murata Manufacturing to the WICED SDK. If it has not	
		been applied, check the Type1GC/1PS Evaluation Board Quick	
		Start Guide and apply the patch file.	
		Building a Demo Application	
		5 Running AT command Application	
Revision E	2021/03/25	Update for .patch platform file	



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## 1. About this Document

### 1.1. Purpose and Scope

This document provides instructions to evaluate an AT command sample application on the Murata Type1GC EVB. Although Type1GC is supported by WICED-SDK, some modifications will be required when using our EVB. We provice the modification as a "platform file" and AT command sample application source code.

Note: Type1GC and 1PS is pin-to-pin compatible module.

For example, in the case of Type1PS, please use Type1PS platform files and module name 1PS instead of 1GC.



#### 1.2. Document Conventions

Platform file – the source code to configure each platform.



# 2. Evaluation Board

The Murata Type1GC Evaluation Board supports both Ethernet and USB interfaces. To allow proper operation with WICED Studio, please verify that the mini-switch SW304 is set with the correct pin settings. To use USB with AT commands, the jumper must be properly configured and used as a "USB device".

- ✓ SW304: pin1 and 2 ON, pin3 and 4 OFF
- ✓ Jumper setting

	R106	R107
USB Host	Open	Short
USB device	Short	Open







# 3. Prerequisites

In this guide, it is assumed that you have applied the patch file provided by Murata Manufacturing to the WICED SDK. If it has not been applied, check the Type1GC/1PS Evaluation Board Quick Start Guide and apply the patch file.

# 4. Building a Demo Application

To Build a Demo Application, the following steps must be performed:

A) Copy the AT command sample application files provided by Murata to your WICED directory.

Note: WICED directory is at "C:\Users\<user name>\Documents\WICED-Studio-<VERSION>" with default installation.



- B) Connect the Evaluation board to your PC via the mini USB cable. Type1GC should be detected as "WICED USB Serial Port (COMXX)". ("XX" is the serial port number.) If Type1GC cannot be detected, you may manually install the driver from <WICED-Studio>\Drivers\Windows\
- C) Change the source code.

To run the sample application, edit "43xxx\_Wi-Fi¥apps¥test¥at\_cmd¥at\_cmd.mk".



D) Start the WICED-SDK.

Start the WICED Studio by selecting *START > ALL Programs > Cypress > WICED-Studio*. Select target "43xxx\_Wi-Fi" or "WICED Filters off".



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🎦 Project Explorer 😫 📃 🗖	🚡 ota2_extract.mk 🗋 at_cmd.mk 🗈 wiced_init.c 💦 os_wrapper 🛛 🎇 🖓	🖲 Make Target 🐹 🞯 💿 🍝 🏠 🖙 ⊃ 📐 🖓 🗖		
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#### E) Make new build targets.

### a) Click "New Make Target" button.

🏕 C/C++ - 43xxx_Wi-Fi/apps/test/at_cmd/os_wrapper_wiced.c - Eclipse - 🗗 X				
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> 🗁 snip	312 #else	@ demo.appliance-CYW943907AEVAL1F download run		
V 🗁 test	313 result = wiced uart receive bytes( cons.uart, buf, &expected transfer size	@ demo.temp_control-CYW943907AEVAL1F download run		
✓ (⇒ at_cmd)	314 #endif /* ATCMD_USE_USB */	snip.apple_homekit.lightbulb_service-CYW943907AEVAL1F USE_N		
at_cmd.h	315	snip.ota2_extract-MurataType1GC		
at_cmd.mk	316 if (result == WICED_SUCCESS)	snip.ota2_extract-MurataType1LD		
debug_log.h	1/printf("length: %d, expected transfer size: %d\n", length, expected	snip.ota2_extract-MurataType1PS		
🗋 makefile	319 break;	snip.scan-CYW943907AEVAL1F		
lc os_wrapper_wiced.c	320 }	snip.scan-CYW943907AEVAL1F-debug download		
os_wrapper_wiced.c.bak	321 else	snip.scan-CYW943907AEVAL1F download		
c os_wrapper.h	222 [	snip.scan-CYW943907AEVAL1F download run		
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process_wiced.c	325 {	snip.scan-CYW943907AEVAL1F-SPI download run		
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c process.h	<pre>327 wiced_rtos_set_semaphore( &amp;cons.console_quit_semaphore ); 329</pre>	snip.scan-CYW943907AEVAL1F-ThreadX-NetX-SPI download run		
recv_thread.c	228 Dreak;	snip.scan-MurataType1LD download run		
recv_thread.c.bak	330	test.at_cmd-MurataType1GC-debug ota2_image download		
c recv_thread.h	331 }	test.at_cmd-MurataType1GC ota2_image download run		
usb_device_cdc_acm_atuart	332	test.at_cmd-MurataType1LD-debug download		
usb_device_cdc_acm_atuart	333 return 0;	test.at_cmd-MurataType1LD download run		
k wiced_init.c	335 ×	test.at_cmd-MurataType1PS ota2_image download run		
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> > mfg_test 14:50:58 Build Finished (took 19m:95.592ms)				
> 🍅 sigma_dut 🗸				
< >	< > <	>		
		1		

"Create Make Target" window will appear.

b) Input the following text to the "Target name" field.

test.at\_cmd-MurataType1GC ota2\_image download run



🐲 Create Make Ta	📀 Create Make Target 🛛 🗙 🗙			
Target name:	ataType1GC ota2 imag	e download run		
larger namer	and perocoloc_mag	e dominoda ran		
Make Target				
Same as the ta	irget name			
Make target: 1 t	est.at cmd-MurataTvp	e1GC ota2 imac		
Build Command				
Use builder se	ttings			
Build command:	\${ProiDirPath}¥make	exe		
	ter communate			
Build Settings				
Stop on first b	Stop on first build error			
Run all project builders				
	OK	Cancel		

c) Select "OK".

📀 Create Make Target 🛛 🗙
Target name: 1urataType1GC ota2_image download run
Make Target Same as the target name Make target: 1 test.at_cmd-MurataType1GC ota2_imag
Build Command ☑ Use builder settings Build command: \${ProjDirPath}¥make,exe
Build Settings ☑ Stop on first build error ☑ Run all project builders
OK Cancel

- d) Repeat steps "a)" through "c)" to create make Target "snip.ota2\_extract-MurataType1GC".
- e) Confirm that the new targets have been added in the "Make Target".





F) Double-click on the Make Target "snip.ota2\_extract-MurataType1GC" to build the application.

Note: It will take some minutes for first building.

C/C++ - 43xxx_Wi-Fi/apps/test/at_cmd/os_wrappe File Edit Source Refactor Navigate Search	wiced.c - Eclipse roject Run CyPE WICED Platform Window Help	- 0 ×
i 🖆 ▼ 📰 🕼 ≜   ⊗ ▼ 🗞 ▼ 🗟   × I> II	■ N 3. 0 1. 〒 文 ⑤ 🍓 🗲 4300, Wi-Fi 🔷 / 🖓 🗉 🖬 👩 ▼ 🙆 → 🙆 → 🧿 → 🧿 → 🧿 →	☆ • O • Ø: • Ø: • Ø ▷ Ø ▷ Ø • ▷ • ▷ • ▷ • ○ •       rolder       Quick Access       B:   Ind C/C++       ☆ Debug
🎦 Project Explorer 🐹 📃 🗖	🕞 ota2_extract.mk 🗋 at_cmd.mk 🗈 wiced_init.c 🚺 os_wrapper 🛛 🔭 🗖 🗖	Make Target
<pre>&gt;</pre>	309       buf += expected_transfer_size;         310       } while (1);         311       #else         312       #else         313       result = wiced_uart_receive_bytes( cons.uart, buf, &expected_transfer_size         314       #endif /* ATCH0_USE_USE */         315       if ( result == WiCE0_SUCCESS )         316       if ( result == WiCE0_SUCCESS )         317       { //pcintf("length: %d, expected_transfer_size: %d\n", length, expected_         318       break;         329       }         321       else         322       else         323       printf( "result = %d\n", result);         324       ends;         325       { printf( "result = %d\n", result);         326       printf( "result = %d\n", result);         327       wiced_rtos_test_semaphore (&cons.console_quit_semaphore );         328       break;         339       }         331       }         332       return 0;         333       *         CO Dubid Consele {30xx_W-Fi}         Making .gdbinit       *         14:56:38 Build Finished (took 19m:9s.592ms)       *	<ul> <li>Casca, Wi-Fi Gemo.appliance-CVW943937AEVAL1F download run Gemo.appliance-CVW943937AEVAL1F download run Gemo.appliance-CVW943937AEVAL1F download run Gemo.apple homektilightbulls gewice-CVW94397AEVAL1F USE,M Gemo.apple homektilightbulls gewice-CVW94397AEVAL1F Gemo.apple ho</li></ul>

- G) Building progress will be displayed on the window of the "Studio Console".
- H) "Build complete" indicates that the building has been successful.

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CDT Build Console [43xxx_Wi-Fi]	
	^
Creating Filesystem BCM94390x_targets.mk ./tools/common/Win32/mk_wicedfs32 build/snip.ota2_extract Creating Filesystem Done <u>Build complete</u> Making .gdbinit	-MurataType1GC/filesystem.bin build
14:59:36 Build Finished (took 8s.39ms)	
<	

 Double-click on the Make Target "test.at\_cmd-MurataType1GC ota2\_image download run" to build the application.

Note: It will take some minutes for first building.



C/C++ - 43xxx_Wi-Fi/apps/test/at_cmd/os_wrapp	r_wiced.c - Eclipse	– 0 ×
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Constant of the second se	<pre>buf += expected_transfer_size; } buf += expected_transfer_size; } buf += csult = wiced_uart_receive_bytes( cons.uart, buf, &amp;expected_transfer_size if endif /* ATCU_DES_USG */ if ( result == WICED_SUCCESS ) //printf("length: %d, expected_transfer_size: %d\n", length, expected_ printf("receive_bytes(binary) error: %d\n", result ); if ( cons.quit == WICED_RUE ) if ( cons.quit == WICED_RUE ) console %% Problems %Search %Debug</pre>	taxe, Wr-Fi

- J) Building progress will be displayed on the window of the "Studio Console".
- K) "Build complete" indicates that the building and downloading of the application has been successful.

🔁 Console 🔀 🤮 Problems 🖋 Search 🕸 Debug 💦 🐥 🎓 😫 📓 🖬 🖷 🖳 📑 🖉 🖛 🔂 🗸	' 🗆	
CDT Build Console [43xxx_Wi-Fi] Downloading resources Tilesystem bulld/test.at_cmd-MurataTypeIGC/Tilesystem.oln at se Downloading APPB build/test.at_cmd-MurataTypeIGC/binary/test.at_cmd-MurataTypeIGC.strippe Downloading apps lookup table in wiced_apps.mk build/test.at_cmd-MurataTypeIGC/APPS.b Resetting target Target running Build complete Making .gdbinit	cto d.e	
15:04:21 Build Finished (took 49s.796ms)		~
<	>	



### 5. Running AT command Application

To verify the application which is downloaded in section 3, you need to launch a terminal software such as Tera Term. Please select [Setup] > [Serial Port...] in the menu bar to setup serial port. Please use the following settings for the COM port connection.

Tera Term: Serial port setup				
<u>P</u> ort:	COM21	$\sim$	ОК	
Sp <u>e</u> ed:	3000000	~		
Data:	8 bit	$\sim$	Cancel	
P <u>a</u> rity:	none	$\sim$		
<u>S</u> top bits:	1 bit	$\sim$	<u>H</u> elp	
Elow control:	none	$\sim$		
Transmit delay 0 msec/ <u>c</u> har 0 msec/ <u>l</u> ine				

COM port settings for USB

Port:	COM16	$\sim$	OK
Sp <u>e</u> ed:	115200	$\sim$	
<u>D</u> ata:	8 bit	$\sim$	Cancel
P <u>a</u> rity:	none	$\sim$	
Stop bits:	1 bit	$\sim$	<u>H</u> elp
<u>F</u> low control:	none	$\sim$	
Transmit delay	/ <u>c</u> har 0	ms	ec/ <u>l</u> ine

COM port settings for UART1



The following texts will appear on Tera Term (UART1).

	💆 COM16 - Tera Term VT	_		×
	<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp			
	initialising NetX_Duo v5.10_sp3 Creating Packet pools NLAN MAC Address : A4:08:EA:B9:5B:38			^
ļ	NLAN Firmware : w10: May 2 2019 02:34:15 version 7.15.168.13 01-7fc7cd46	0 (r714	231) F	₩ID
ł	NLAN CLM : API: 12.2 Data: 9.10.74 Compiler: 1.31.3 ClmI eation: 2019-05-02 02:29:29	mport:	1.36.3	Cr
	Console app USB CDC-ACM Device init starting Detected board strapping is in USB-PHY mode!! Detected board is in USB Device mode!! Demonstrates id=0x81a, rev=23 USB Device support 1 DCI resource USB20 Device io=0x18007000, irq=3 Democh_reset: chipid=43909, chiprev=2 Democh_reset: init 40nm USBPHY USB set DeviceReady USB20 Device init completed!!! Thread number not running: 0			
l	unter recv_thread.			

The following texts will appear on Tera Term (**USB**) when you type an AT command **"AT+WSCAN"** and line feed code (**CR+LF**) on the Tera Term window.

vī	сом	21 - Tera	Term VT			_		×
<u>F</u> ile	<u>E</u> dit	<u>S</u> etup	C <u>o</u> ntrol	<u>W</u> indow	<u>H</u> elp			
***************************************	CAN: CAN: CAN: CAN: CAN: CAN: CAN: CAN:	73 , -64, , -76, , -77, , -77, , -78, , -58, , -58, , -58, , -57, , -75, , -75, , -72, , -72, , -72, , -72,			,6,20,0pen, ,6,20,WPA2_AES_TKII ,7,20,WEP_PSK,JP ,11,20,AES_ENT,JP ,11,20,AES_ENT,JP ,52,20,AES_ENT,JP ,52,20,Qeen,JP ,52,20,Qeen,JP ,52,20,Qeen,JP ,52,20,Qeen,JP ,52,20,WPA2_AES_PSK,JP ,108,20,AES_ENT,JP ,108,20,AES_ENT,JP ,108,20,WPA2_AES_PSK,JP ,124,20,WPA2_AES_PSK,JP ,124,20,AES_ENT,JP ,124,20,AES_ENT,JP ,124,20,AES_ENT,JP ,124,20,AES_ENT,JP ,124,20,AES_ENT,JP ,122,20,AES_ENT,JP ,132,20,AES_ENT,JP ,132,20,WPA2_AES_PSK,JP ,132,20,WPA2_AES_PSK,JP ,132,20,WPA2_AES_PSK,JP	P_PSK,		
(END)								