

Qualcomm_5G Modem Log_Guide and Reference

RG5xxQ&RG5xxN&RM5xxN&RG5xxF Module Series

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About Document

Revision History

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1 Preface

In this document, it mainly illustrates how to capture modem log based on 5G module such as RG50xQ&RG520N&RG52xF.

1.1. Applicable Scope

Manufacturer Version	Tool	Log Output	Applicable Module Types
Qualcomm 5G	QWinLog		
	QXDM	Modelli LOG	

1.2. Download

QCOM	QCOM_V1.6.zip
USB Driver	Quectel_LTE&5G_Windows_USB_Driver_V2.2.4.zip
QPST	<u>qpst.win.2.7_installer_00496.2.zip</u>
QLOG	QLog_Linux_Android_V1.5.14.zip
QWinLog	QWinLog V1.8.7.zip

2 In Windows

2.1. Install USB Driver

Install USB driver as above link, initiate device and connect to USB port, the Quectel COM port will be visible correspondingly.

- 🗸 🛱 Ports (COM & LPT)
 - Quectel USB AT Port (COM50)
 - Quectel USB DM Port (COM52)
 - Quectel USB NMEA Port (COM53)

2.2. Capture dump log

 Configure it as Dump mode via following AT commands at+qcfg="modemrstlevel",0 at+qcfg="aprstlevel",0

Note

All above commands will be valid instantly. Moreover, these commands will not be saved, as a result, it is not allowed to reboot module after setting.

- Install QPST
- Power on and connect to USB port
- Open QPST to attach DM port

	Add New Port	×
OPST Configuration (bf-fae-n-nuck-s)	Serial/USB Ports Outgoing IP Connections	
File Convers Start Cliente Mindow Hale	Please enter port to be monitored by the QPST Server 2	
Active Phones Ports Active Clients IP Server	CDM128 - USB/Unknown (Quectel USB DM Port, 5cc5dcfe) CUM129 - USB/Unknown (Quectel USB KAT Port, 5cc5ddre) CDM130 - USB/QC MEA (Quectel USB MRA Port, 5cc5dcfe) CDM131 - USB/QC Data Modern (Quectel USB Modern, 5cc5dcfe)	
Port State Label		
	Show Serial and USB/QC Diagnostic ports only	
	Port:	
	Port Label:	
	Note: The baud rate for the port will be set to 38400 bps	
		Cancel
<u>E</u> nable <u>D</u> isable <u>B</u> err	ove Add New Port	
OBhanna OBata I Clianta S	Pursies	
ophones opports i clients 5	rver kunningd	
Eile Sene	r Stat Cliente Window Helm	
The Servi		
Active Pho	nes Ports Active Clients IP Server	
Port	State Label Phone Link	
<i>≣</i> co	M128 Enabled COM128 No Phone USB	
Ena	ble Disable Remove	
0 Phones	1 Ports 1 Clients Server Running	

• Configure DM port as the mode to capture dump via right-click "Saraha Configuration".

🔥 QPST	Configuration (hf-f er Start Clients	ae-n-puck-s) Window Help		-		×	
Active Pho	ones Ports Activ	e Clients IP Server					
Port	State	Label	Phone		Link		
a co	M128 Enabled	COM128	SD)	View			>
				Properties			
				Port Shutdown			
				Switch modem p	ort to diagn	ostic mod	e
				Port Trace	tion		
			- L	Send Sahara Rese	et Command	I	
				Send Diag Comn	nand		
				Configure Comn	nunication P	rotocol	
Ena	ble Disa	ble Remo	ove		Add New Po	t	
1.04	1.Deate	1 Cliente Co	D in .			-	
TPhones	TPorts	i Clients Se	rver Kunning			.::	
🔥 QPST Configu	Sahara Config	uration					
ile Server Sta							
Active Phones P	Sahara XML fil	2					
neare monee		(Image files w	ill be relative to t	he path of this f	ile)		
Port S	Use this file fo	r only one down	load				
GCOM128 E	Auto reset aft	er collecting mer	nory dump				\checkmark
	Save each me	mory dump in a u	unique timestamp	ed folder			
	Continue to be	ot after collecti	ng memory dump				
	C	d					
	Save memory	(Dump	files will be relativ	e to the nath of	f this file)		
	Linen se sei vier	Cabara Hallar	Desfere segues	ted action			
	opon receiving	Sariara Hello;	Perform reques	leu acuori			
	Create memor	y dump files for	only these sectio	n names:			L
	Double	e click a row to		-			
E 11	add/edit/e name, Pre	ss <enter> or</enter>		-			
Enable	<tab></tab>	to enter data,		-			

• Reproduce issue via making the module dump, the module will capture relevant dump log automatically.

ctive Phones	Ports Active	Clients IP Server		
Port	State	Label	Phone	Link
ළි COM128		COM128	Sahara Memory Dum	USB

• Open the directory where dump log is saved and provide it to R&D. C:\ProgramData\Qualcomm\QPST\Sahara

ame	Date modified	Туре	Size
Port_COM128	07/01/2023 18:09	File folder	

2.3. Capture modem log

In Windows, it is available to capture Qualcomm modem log via QWinLog provided by Quectel, or capture corresponding log via QXDM released by Qualcomm itself. In following figure, it will display how to capture modem log of Qualcomm modules via QWinLog and QXDM.

2.3.1. QWinLog

The QWinLog is valid to capture mode log in real-time and save the log into the path selected by yourself.

1. Log Configuration: Click "System Settings" in the drop-list of "Settings".

QWinLog_V1.8	3.7	_		\times
Settings Action				
System settin	gs			
Merge log fi	es			
Type:	• USB&TCP Port CLAN Port			
Port:	Quectel USB DM Port (COM18)	🗌 🗆 Dev	detection	
Baudrate:	115200 💌			
Config file:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\conf\qual\5	GNR_LTE	10_	
Log path:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\Log			

If it is hoped to save log data to other files, do not tick option "Save log data into a single file". In this situation, the maximum size of a single log file can be set.

System settings		\times
Log save settings Unite size of saved log data: 1024	K bytes	
Max size of a single log file: 500	M bytes	2
🗔 Save log data into a single file 🛛 1		
✓ Loop coverage old files		
Maxinum archive count : 10 files 🗨		
<u> </u>		
Other settings		
I ⊂ Create QShrink4 data base file		
QXDM Log Sink: USB		
Auto start while device connected		
Network automatic reconnection		
3 OK Cancel		

2. Capture modem log

Preliminarily, insert module, install USB driver in Windows, open QWinLog, configure as shown below and click "Start" to capture modem log.

- 🔽 QXDM log ·	1
Туре:	USB&TCP Port 2C LAN Port
Port:	Quectel USB DM Port (COM18) 3 🔽 Dev detection
Baudrate:	115200
Config file:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\conf\qual\5GNR_LTE_Ct
Log path:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\Log 4
🔲 QASR log -	
Туре:	USB Port C LAN Port
Port:	_
Baudrate:	115200
Config file:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\conf\asr\default_asr.cfg
Log path:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\Log
UNISOC log	, <u> </u>
Туре:	C USB Port C LAN Port
Server IP:	
Server port:	ap: cp:
Config file:	F:\Q\VinLog_V1.8.7\Q\VinLog_V1.8.7\conf\qual\default.cfg
Log path:	F:\QWinLog_V1.8.7\QWinLog_V1.8.7\Log

Click "Stop" to pause capturing log. Thus, it is available to see corresponding log file in the path to save it.

Note

It is necessary to transfer AT command **AT+QCFG= "DBGCTL"**, **0** before above operation. If it succeeds to execute, both "Error" and "OK" will be returned. As for "Error", which indicates it is opened by default. Please keep in mind that this command is limited to capture log of Qualcomm 4G modules. In terms of 5G modules, it is no necessity to execute this command.

2.3.2. About QXDM

1 Configuration

Initially, it is needed to load default configuration before capturing log via QXDM. Click the option "Load Default Configuration" in the menu of "File". After that, it is capable to reset to default configuration via clicking "Yes".

🕓 QXDM_Pro_5.1.310 (Disconnecte	ed)
<u>File V</u> iew <u>O</u> ptions <u>T</u> ools <u>W</u> ind	ow <u>H</u> elp
Annotate	•
Manage Configuration (DMC)	Ctrl+M
Load Configuration	Ctrl+O
Save Configuration	Ctrl+S
Load Default Configuration	
Open	•
Save Items	Ctrl+I
Replay Items	Ctrl+R
Item Store Settings	
New Items	Alt+I
Quick Disconnect	Ctrl+Q
Recent Data Files	•
Recent Configuration	•
E <u>x</u> it	
🕓 Reset Default DMC	×
Reset To Default Dmc Conf	igurations?

2 Capture log via QXDM

Open QXDM, click "Connect" to capture relevant log in accordance with configuration as shown below.

QXDM_Pro_5.1.310						_	
File View Options Tool	ls <u>W</u> indow <u>H</u> elp In In I	1. 1.1.	75 07 00 00		1.		
		mand: send_data		View Fir	ider:		
Kev Tv	pe Time Stamp	Name 4	Kev	Type T	ime Stamp	_	Name
	Device Selection				? ×		
	Diag GPS QDSS						
	Port	State	Phone	3	Connect		
	□ 通信端口 (COM1)	Active	N/A		Okay		
2	Quectel USB DM Port (COM18)	Running	SDX_OLYMPIC_LITE				
	Quectel USB AT Port (COM20)	Active	N/A				
	Quectel USB Modem #5	Active	N/A				► -
	USB Serial Port (COM19)	Active	N/A				
							Name 🔺
_	_ Store Log mask on device						
					Close		
				1 10 TT			
	233.28 KiB/s	8.00 B/s	WSK4:Not Connected	1.48 KiB	0.8 0:0	0:0.0	0

3 Save log

Once the issue is reproduced, it is approachable to stop capturing log via "disconnect" in "Device Selection" viewer. In addition, it is also valid to save log into suitable path via "Save Items" in the drop-list of "File".

Note

It is necessary to transfer AT command **AT+QCFG= "DBGCTL"**, **0** before above operation. If it succeeds to execute, both "Error" and "OK" will be returned. As for "Error", which indicates it is opened by default. Please keep in mind that this command is limited to capture log of Qualcomm 4G modules. In terms of 5G modules, it is no necessity to execute this command.

QXDM_Pro_5.1.310	- Quectel USB DM Port (COM18)				– 🗆 X
<u>File View Options T</u>	ools <u>W</u> indow <u>H</u> elp				
NDYE	™ 🗄 🖬 🖓 () () () () () [[···	nmand: send_data i	75 37 03 00	View Finder:	
Filtered View:[2]{DM	IC Library}	_ 🗆 ×	Filtered View:[1]		_ 🗆 ×
Кеу	Type Time Stamp	Name	Key Type	Time Stamp	Name
[73/ 0/2] QTRAC [73/ 0/2] OTRAC	🚯 Device Selection			? ×	NR5G/High/RF NR5G/Error/RF
[73/ 0/2] QTRA([73/ 0/2] QTRA(Diag GPS QDSS				NR5G/Low/RF NR5G/Low/RF
[73/ 0/2] QTRAC [73/ 0/2] QTRAC	Port	State	Phone	3 Disconnect	NR5G/Low/RF NR5G/High/RF
[73/ 0/2] QTRAC [73/ 0/2] QTRAC	□ 通信端口 (COM1)	Active	N/A	Okay	NR5G/High/RF NR5G/High/RF
[73/ 0/2] OTRAC [73/ 0/2] OTRAC	Quectel USB DM Port (COM18)	Running	SDX_OLYMPIC_LITE	2	NR5G/High/RF NR5G/High/RF
[73/ 0/2] QTRAC [73/ 0/2] QTRAC	Quectel USB AT Port (COM20)	Active	N/A		NR5G/High/RF
[73/ 0/2] QTRAC [73/ 0/2] QTRAC	Quectel USB Modem #5	Active	N/A		₽₹
[73/ 0/2] QIRAC [73/ 0/2] QIRAC	USB Serial Port (COM19)	Active	N/A		
[73/ 0/3] QTRAC [73/ 0/2] QTRAC					Name A
[73/ 0/2] QTRA					NR5G/Low/RF
[73/ 0/3] QTRAC					NR5G/Low/RF
[73/ 0/0] QTRAC [73/ 0/0] QTRAC					NR5G/High/RF
[73/ 0/0] QTRA					rnal QTrace Message rnal QTrace Message
[73/ 0/2] QTRAC					NR5G/High/RF
[73/ 0/2] QTRA					NR5G/High/RF NR5G/High/RF
[73/ 0/2] QTRAC	🗖 Store log mask on device				NR5G/High/RF
[73/ 0/2] QTRA				a]	NK50/High/KF
4				Llose	→
	250.66 KiB/s 0.00 B/s	ASB4 DB Down	load Success 4 06 MiB	13.5 3:22:35.233	48721 0
		Period Dona		J J	,
& QXDM_Pro_5.1.310	(Disconnected)				- 🗆 ×
<u>File View Options T</u> e	ools <u>W</u> indow <u>H</u> elp				
Annotate	• DOChle	nmand: send data	75 37 03 00 🗸	View Finder:	

Annotate	·	UO [[Command:] send_data]	5 37 03 00		w finder:		_
<u>Manage</u> Configuration (DMC)	Ctrl+M	_ 🗆 ×	I Filtered View	:[1]		<u> ×</u>	۲
Load Configuration	Ctrl+O np	Name 📥	Key Key	Туре	Time Stamp	Name -	
<u>Save Configuration</u>	Ctrl+S 11	RF/NR5G/High/RF	[73/ 0/2] [73/ 0/2]	QTRACE	03:25:03.625416	RF/NR5G/High/RF RF/NR5G/High/RF	
Load Default Configuration	86	Radio Frequency/High	[73/ 0/1]	OTRACE	03:25:03.625440	RF/NR5G/Medium/RF	
	90	Radio Frequency/High	[73/ 0/2]	QTRACE	03:25:03.625444	RF/NR5G/High/RF	
Open	P3	Radio Frequency/High	[73/ 0/2]	QTRACE	03:25:03.625446	RF/NR5G/High/RF	
Save Items	Ctrl+I 60	Radio Frequency/High	[73/ 0/2]	QTRACE	03:25:03.625806	RF/NR5G/High/RF	
Ronlay Itams	Ctrl+P C0	RF/NR5G/High/RF	[73/ 0/1]	QIRACE	03:25:03.625807	RF/NR5G/Medium/RF	
Replay Refils	Cut+K 09 74	NP5G 111 EW/ PX Control ([/3/ 0/2]	OTRACE	03:20:03.020808	RF/NR5G/High/RF	
Item Store Settings	74	RE/NR5G/High/RE	[73/ 0/2]	OTRACE	03:23:03:020008	RE/NR5G/Medium/RE	
New Items	Alt+I 80	RF/NR5G/Error/RF	[73/ 0/2]	OTRACE	03:25:03.626090	RF/NR5G/High/RF	
Ouide Discourset	Curl 1 O 83	RF/NR5G/Error/RF				····;······	
Quick Disconnect	Ctrl+Q 84	RF/NR5G/Error/RF					_
Recent Data Files	86	RF/NR5G/High/RF	•				-
	07	KF/INKJØ/HIgh/KF					
Descrit Cardinautian	N 90	RE/MR5G/High/RE					-
Recent Configuration	► 89 90	RF/NR5G/High/RF RF/NR5G/High/RF	💛 Item View			_ 🗆 ×	¢
Recent Configuration E <u>x</u> it	▶ 89 90 91	RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF	View Kev	Туре	Time Stamp	_ □ × Name	د ۱
Recent Configuration E <u>x</u> it [14/ 2] MSG	▶ 89 90 91 03:25:03.625405	RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF Radio Frequency/High	Vitem View	Туре	Time Stamp	- D > Name	د ۲
Recent Configuration Exit [14/ 2] MSG [73/ 0/2] QTRACE	▶ 89 90 91 03:25:03.625405 03:25:03.625416	RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF Radio Frequency/High RF/NR5G/High/RF	➢ Item View Key [0125]	Type DIAG RX	Time Stamp 03:25:05.314000 03:25:05 314000		< •
Recent Configuration Exit [14/ 2] MSG [73/ 0/2] QTRACE [73/ 0/2] QTRACE	89 90 91 03:25:03.625405 03:25:03.625416 03:25:03.625435	RF/NR5G/High/RF RF/NR5G/High/RF Radio Frequency/High RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF	Key [0125] [0125]	Type DIAG RX DIAG TX DIAG RX	Time Stamp 03:25:05.314000 03:25:05.314000 03:25:05.317000	Landed Message Report (Extended Message Report (Extended Message Report (Extended Message Report (< •
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Recent Configuration Exit [14/ 2] MSG [73/ 0/2] QTRACE	89 90 91 03:25:03.625405 03:25:03.625416 03:25:03.625435 03:25:03.625446 03:25:03.625446 03:25:03.625446	RF/NR5G/High/RF RF/NR5G/High/RF Radio Frequency/High RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF RF/NR5G/High/RF	Item View Key [0125] [0125] [0125] [0125] [0125] [0125] [0125]	Type DIAG RX DIAG TX DIAG RX DIAG TX DIAG RX DIAG TX	Time Stamp 03:25:05.314000 03:25:05.314000 03:25:05.317000 03:25:05.317000 03:25:05.320000	Landed Message Report of Extended Message Report of	•
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3 In Linux&Android

3.1. Install USB Driver

For details, see <Quectel_LTE&5G_Linux_USB_Driver_User_Guide_V2.0.pdf>. After that, following contents will be displayed when booting and connecting to USB.

				-										
L00.	t@ubi	untu:/ho	ome/s	r# 1	lsust)								
Bus	004	Device	001:	ID	1d6l	0003	Linux F	ounda	tion :	3.0 гос	ot hub)		
Bus	003	Device	004:	ID	0e01	f:0002	VMware,	Inc.	Virt	ual USE	3 Hub			
Bus	003	Device	003:	ID	0e01	f:0002	VMware,	Inc.	Virt	ual USB	B Hub			
Bus	003	Device	007:	ID	2c70	::0125								
Bus	003	Device	002:	ID	0e01	f:0003	VMware,	Inc.	Virt	ual Mou	ise			
Bus	003	Device	001:	ID	1d6l	0002	Linux F	ounda	tion :	2.0 гос	ot hub)		
Bus	001	Device	001:	ID	1d6l	0002	Linux F	ounda	tion 2	2.0 гос	ot hub)		
Bus	002	Device	002:	ID	0e01	f:0002	VMware.	Inc.	Virt	ual USB	Hub			
Bus	002	Device	001:	ID	1d6l	0001	Linux F	ounda	tion :	1.1 гос	ot hub)		
гоот	t@ubu	untu:/ho	ome/s	r# 1	lsust	o-t								
/:	Bus	04.Por	t 1:	Dev	1. (Class=r	oot hub	. Dri	ver=xl	hci hco	1/4p.	10000	м	
/:	Bus	03.Por	t 1:	Dev	1. (class=r	oot_hub	Dri	ver=xl	hci ⁻ hcd	1/4p.	480M		
	1	Port 1	: Dev	2.	If (0. Clas	ss=Human	Inte	rface	Device	. Dri	ver=u	sbhid.	12M
	i	Port 2	: Dev	7.	If	3. Clas	ss=Vendo	r Spe	cific	Class.	Driv	er=op	tion.	480M
	1	Port 2	: Dev	7.	If	L. Clas	ss=Vendo	r Spe	cific	Class.	Driv	er=op	tion.	480M
	1	Port 2	: Dev	7.	If 4	4. Clas	ss=Vendo	r Spe	cific	Class.	Driv	er=am	i wwan	. 480M
	1	Port 2	: Dev	7.	Tf :	2. Clas	ss=Vendo	r Spe	cific	Class.	Driv	/er=00	tion.	480M
		Port 2	: Dev	7	Tf () Clas	ss=Vendo	r Sne	cific	Class,	Driv		tion	480M
		Port 3	: Dev	3	Tf () Clas	ss=Huh	Drive	r=hub	/7n 12	м	ci – op	,	10011
		Port 4	· Dev	Δ [']	Tf (θ Class	ss-Huh	Drive	r-huh	/7n 49	10M			
1.	I Bus		- DCV	Dev	1 (lacc-r	oot huh	Dri	ver-ul	hci hce	1/20	12M		
· ·	1	Port 2	· Dev	2	Tf (a Clas	ss-Huh	Drive		/70 12	M	1211		
1.	Rus		- Dev	Dev	1 (lacc-r	oot huh	Dri		hci-nci	/60	480M		

3.2. Capture dump log

Copy QLog to Linux host. For specific procedure, see following link. Quectel_QLog_Linux&Android_User_Guide_V1.1.pdf

3.3. Capture modem log

Copy QLog to Linux host. For specific procedure, see following link. Quectel_QLog_Linux&Android_User_Guide_V1.1.pdf