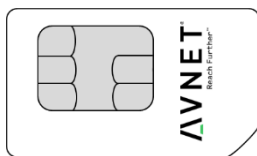




AVeUICC APPLICATION NOTE 001

Configuring QUECTEL modems for the AVeUICC family of products



1 Introduction

This document aims at listing Quectel modems with appropriate FW versions and specific sets of commands to execute when interfacing with an eUICC. The list of modems with FW versions provided in this document have been tested and approved by Avnet.

2 Hardware interfacing

An eUICC in plastic or chip format offers a hardware interface to the modem similar to a standard SIM card:



3 Software interfacing

In order to benefit from full eUICC functionalities (remote operation by the SMSR / SMDP), the modem firmware needs to handle the AUTO-BIP protocol, which is seldom the case for modems manufactured prior 2019. For these modems, an appropriate firmware update is required in order to comply with an eUICC.

For a full documentation on the AUTO-BIP protocol, please go to <https://www.gsma.com/newsroom/wp-content/uploads/SGP.02-v4.0.pdf>

This table summarizes Quectel modems and their FW versions having passed the Avnet eUICC test bench:

HW reference	FW reference	2G	3G	4G	Cat-M	Cat-NB (**)
UG96	UG96LNAR02A07E1G_RC2	√	√	N/A	N/A	N/A
EC25-E	EC25EFAR06A03M4G	√	√	√	N/A	N/A
EC21-E	EC21EFAR06A01M4G_BETA0704	√	√	√	N/A	N/A

EG25-G	EG25GGBR07A07M2G	√	√	√	N/A	N/A
EG91-E	EG91EFCR06A06M4G	√	√	√	N/A	N/A
EG95-E	EG95EFBR06A04M4G	√	√	√	N/A	N/A
BG96	BG96MAR02A07M1G	√	N/A	N/A	√	√
BG77	BG77LAR02A04_01.005.01.005	N/A	N/A	N/A	√	√
BG95	BG95M3LAR02A03_01.012.01.012	√	N/A	N/A	√	√

(*) eUICC admin commands under cat-NB networks are not guaranteed and depend on several factors:

- network quality: is the signal strong enough to allow a bitrate sufficient for https with the SMSR ?
- availability of services by the operator: SMS-MT, https

4 List of commands to execute

4.1 UG96

Only once at first power-on is enough. Can be rerun at will without problems:

- AT+QCFG="autobip",1,1,5
- AT+QCFG="bip/auth",1
- AT+QSTK=1

4.2 BG96

Only once at first power-on is enough. Can be rerun at will without problems:

- AT+QNVFW="/nv/item_files/modem/uim/gstk/proactive_feature_enable_cfg",7FFFFFFF
- AT+QNVW=6253,0,"01"
- Restart the module

4.3 EC25, EC21, EG25, EG91, EG95, BG77, BG95

Only once at first power-on is enough. Can be rerun at will without problems:

- AT+QCFG="bip/auth",1

5 Test covered by the Avnet eUICC validation team

In order to ensure a full service compliance, all possible combinations of actions are tested every time a New_MNO is connected to the service:

	Card			SM-SR			PDP Acted	Action				
	Current state	MNO1 loaded	MNO2 loaded	Current state2	MNO1 loaded	MNO2 loaded		Audit	MNO1 enable	MNO2 enable	MNO2 delete	MNO2 download
1	MNO1 enabled	Y	Y	MNO1 enabled	Y	Y	N	Pass	N/A	Pass	Pass	N/A
2	MNO2 enabled	Y	Y	MNO2 enabled	Y	Y	N	Pass	Pass	N/A	N/A	N/A
3	MNO1 enabled	Y	N	MNO1 enabled	Y	N	N	Pass	N/A	N/A	N/A	Pass
4	MNO1 enabled	Y	Y	MNO2 enabled	Y	Y	N	Pass	N/A	N/A	N/A	N/A
5	MNO2 enabled	Y	Y	MNO1 enabled	Y	Y	N	Pass	N/A	N/A	N/A	N/A
6	MNO1 enabled	Y	N	MNO1 enabled	Y	Y	N	Pass	N/A	N/A	N/A	N/A
8	MNO1 enabled	Y	Y	MNO1 enabled	Y	Y	Y	Pass	N/A		Pass	N/A
9	MNO2 enabled	Y	Y	MNO2 enabled	Y	Y	Y	Pass	Pass	N/A	N/A	N/A
#	MNO1 enabled	Y	N	MNO1 enabled	Y	N	Y	Pass	N/A	N/A	N/A	Pass
#	MNO1 enabled	Y	Y	MNO2 enabled	Y	Y	Y	Pass	N/A	N/A	N/A	N/A
#	MNO2 enabled	Y	Y	MNO1 enabled	Y	Y	Y	Pass	N/A	N/A	N/A	N/A
#	MNO1 enabled	Y	N	MNO1 enabled	Y	Y	Y	Pass	N/A	N/A	N/A	N/A

During these tests, the fallback mechanism, local management applet and SMSR-polling applets are also checked.

Document Control

Document Version: 1.11
Document Date: 10/19/2021
Document Author(s): Guillaume Crinon
Document Classification: Restricted
Document Distribution: Customer Facing

Revision History

Version	Date	Comment
1.0	08/31/2021	Preliminary
1.1	09/14/2020	Added BG77
1.11	10/19/2021	Added BG95 TBD
1.12	10/25/2021	Added BG95-M3