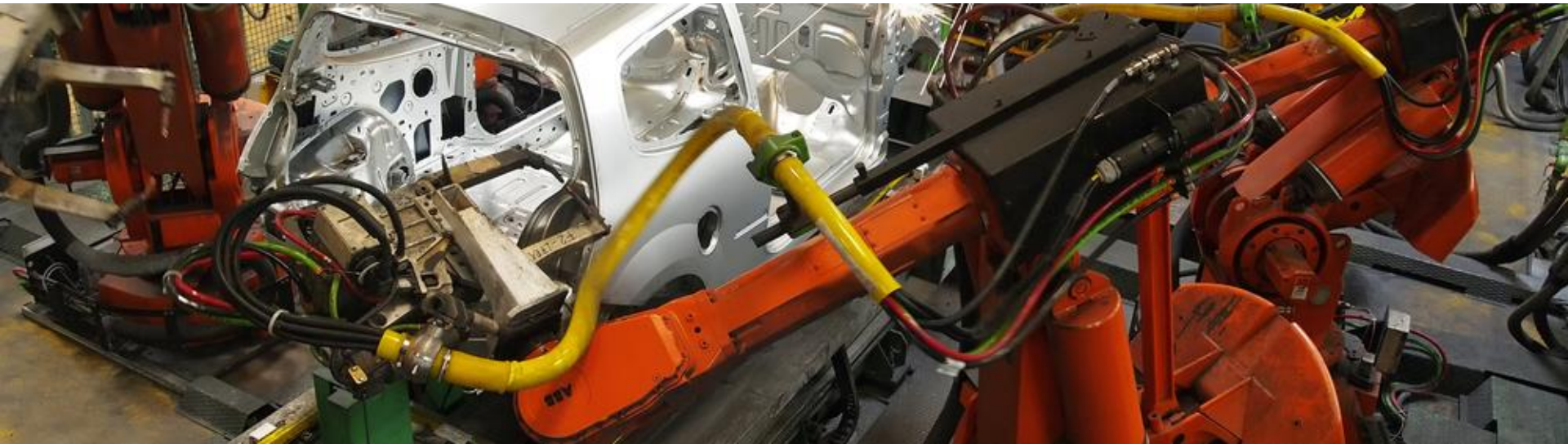# AVeUICC3100xxx product family
The Reprogrammable SIM Card
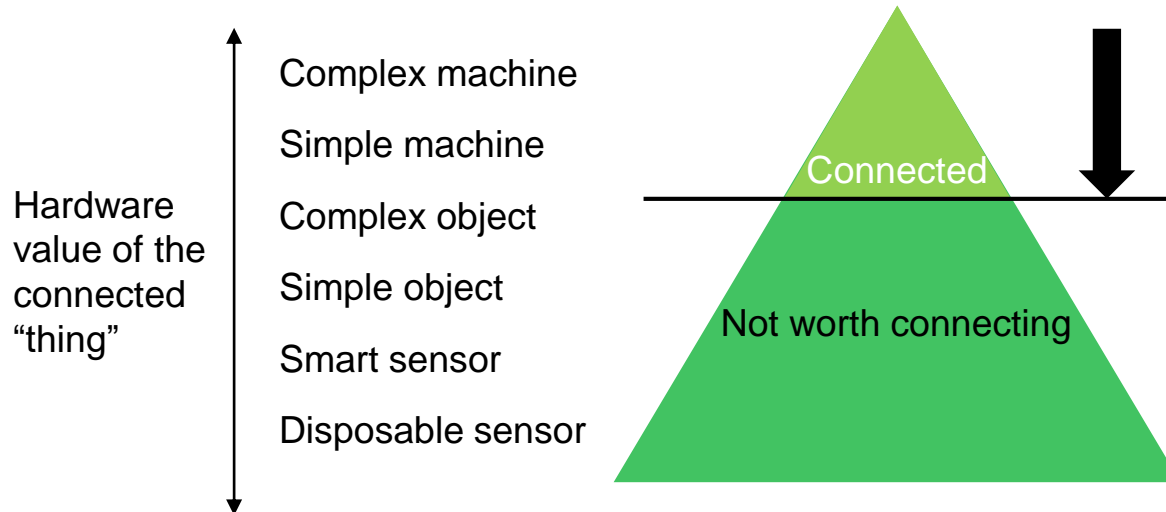
19.03.2020

ΛVNET®
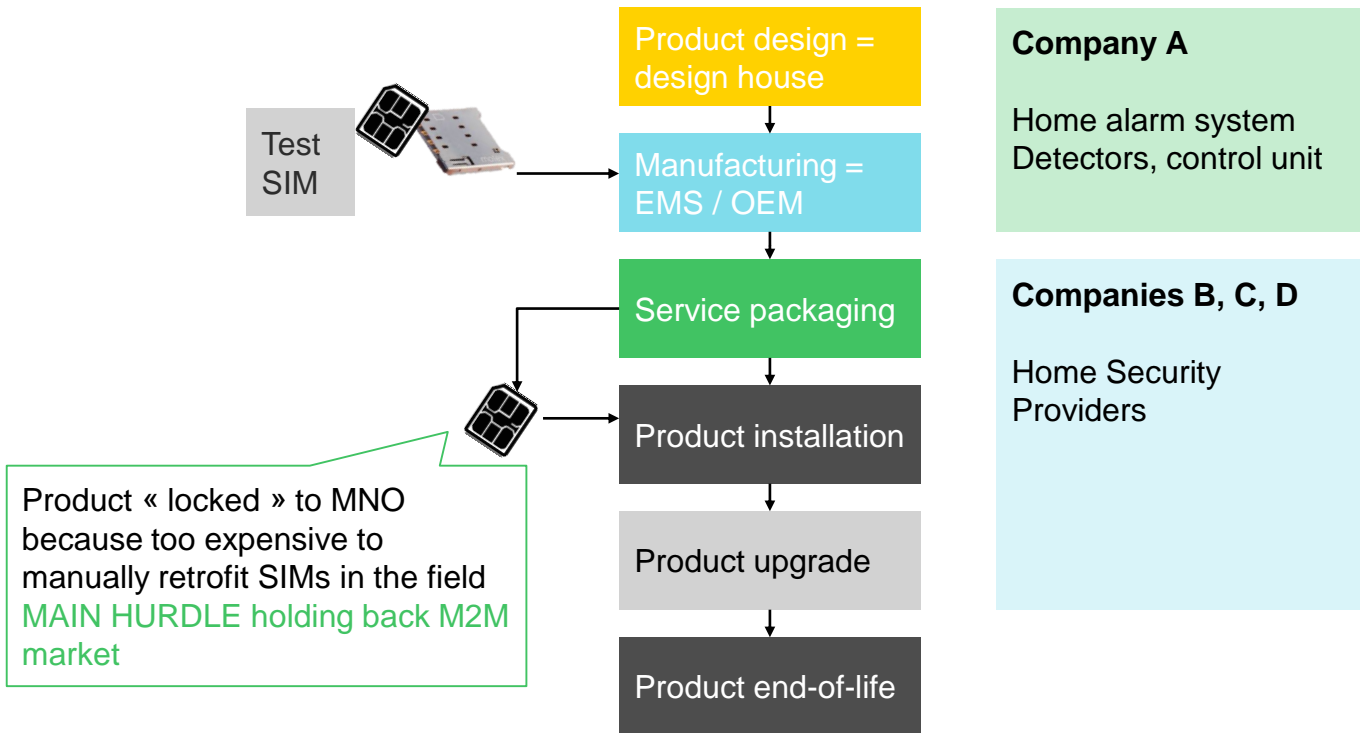Reach Further™

The IoT is our 2nd Telecom Revolution

- Connecting people was once luxury, a privilege reserved to the rich
- Connecting people is now a mature business reaching saturation

- Connecting "things" was once luxury reserved to high-end machines
- Expanding the market of connected "things" is simply pushing down the cost boundary

Hardware value of the connected "thing"

Complex machine

Simple machine

Complex object

Simple object

Smart sensor

Disposable sensor

Connected

Not worth connecting

Avnet confidential

Legacy SIM –
Poor flexibility holding back M2M/IoT market

Test SIM

Product design = design house

↓

Manufacturing = EMS / OEM

↓

Service packaging

↓

Product installation

↓

Product upgrade

↓

Product end-of-life

Company A

Home alarm system
Detectors, control unit

Companies B, C, D

Home Security Providers

Product « locked » to MNO because too expensive to manually retrofit SIMs in the field
MAIN HURDLE holding back M2M market

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2018
IoT Innovator
SILVER
AWARD
WINNER
IoTInnovator.com

Opportunity

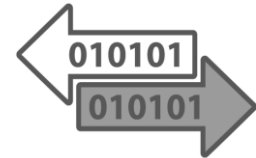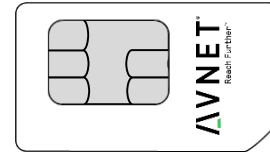| Problem	eUICC solution
Each cellular connected IoT device requires a SIM card	eUICCs behave like SIMs in IoT devices
Manufacturing with many carriers requires as many production SKUs	Manufacturing with 1 SKU and differentiating products later over-the-air in the field
Field deployed devices require physical SIM card change to change carrier	Changing carrier can be performed over-the-air as a service
It is cost prohibitive to change SIMs on deployed devices which remained locked to the same carrier forever	Customers can frequently bid data plans among carriers over not only leveraging news products but also already deployed devices

eUICC – The reprogrammable 2G/3G/4G/Cat-M1 SIM

SIM vs « MNO eUICC » vs real eUICC

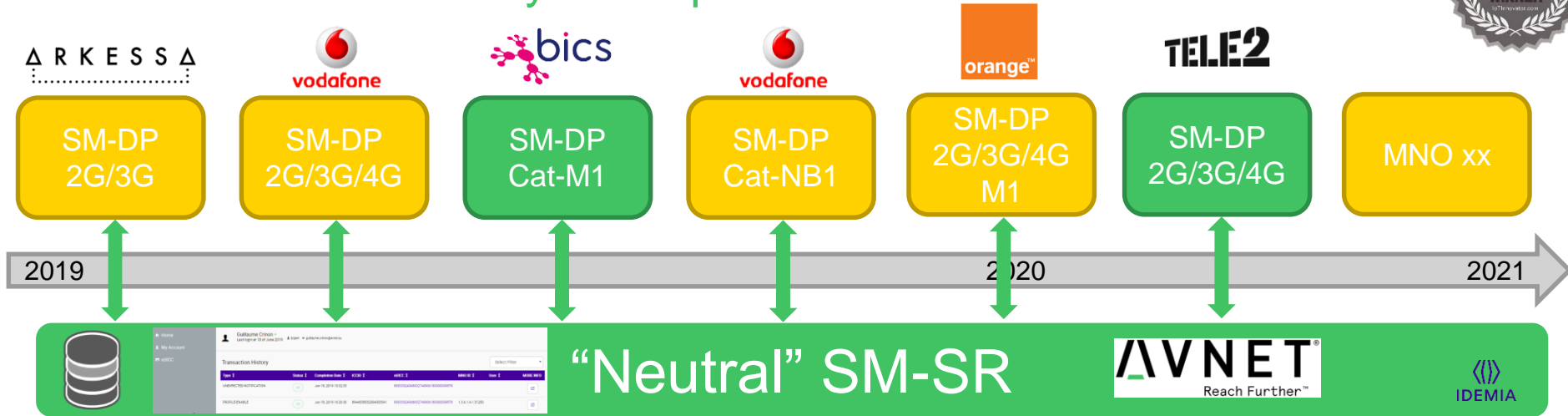|	SIM card	MNO eUICC	Avnet eUICC
Delivered with operator profile	√	√	√
Pre-paid data allowance for factory test	Optional	Optional	√
OTA carrier provisoning	X	√	√
OTA swap of MNO profile	X	√	√
Customer controls which profile is inside the SIM/eUICC	√	X	√
Customer can change data plan invoicing partner	X	X	√
No fees, no engagement	X	X	√
On-demand applet portfolio	X	X	√

Avnet confidential

The eUICC concept

- eUICC = embedded Universal Integrated Circuit Card
- A SIM card with flash memory instead of ROM allowing to change the operator (MNO or VNO) profile with a remote management platform
  - Up to 3 MNO/VNO profiles simultaneously
- Can be packaged in:
  - 2FF (plastic)
  - MFF2=DFN6 (chip)
- A management platform able to operate services such as operator switches

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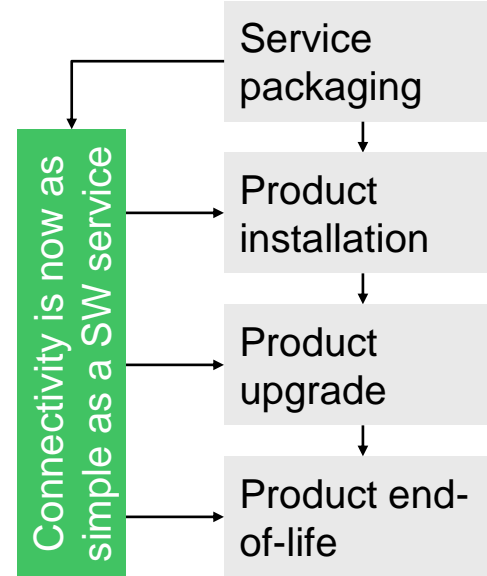# Avnet eUICC management system as 1 global hub allowing any OEM to download any MNO profile

ARKESSA
SM-DP 2G/3G

vodafone
SM-DP 2G/3G/4G

bics
SM-DP Cat-M1

vodafone
SM-DP Cat-NB1

orange
SM-DP 2G/3G/4G M1

TELE2
SM-DP 2G/3G/4G

MNO xx

2019   2020   2021

"Neutral" SM-SR

AVNET Reach Further™

IDEMIA

Simple pay-per-use business-model
No yearly subscription, no engagement, no hidden costs

AVeUICC3100
AVNET

QUECTEL
BG96

**Avnet confidential**

eUICC benefit #1: Connectivity as a Service

- Along the product life, whoever manages it can renegotiate his connectivity contract every 1/2/3 years and change operator for cost optimization without manual SIM retrofitting in the field

  - This is an important cost saver

  - This is a new service by Avnet

- We call the solution "future-proof" and believe it will grow the overall market for modems and 2G/3G/4G/Cat-M1 connectivity

- We are not an MNO: our customers can have a direct relationship to their preferred MNO for data plans and operations

Connectivity is now as simple as a SW service

- Service packaging
- Product installation
- Product upgrade
- Product end-of-life

Avnet confidential

eUICC benefit #2: Late Product Personalization

– Decouple connectivity from the physical SIM card component

– When our OEM customer produces for several customers/geographies, the production needs to be manually differentiated in the factory with the SIM cards corresponding to the final destination

– The eUICC solves this: the physical component is implemented at product design/manufacturing and the service packager upgrades the operator later in the field "as a service"

– This is an important cost saver and a service our OEM customers can resell themselves

– We are not an MNO: our customers can have a direct relationship to their preferred MNO for data plans and operations

Avnet confidential
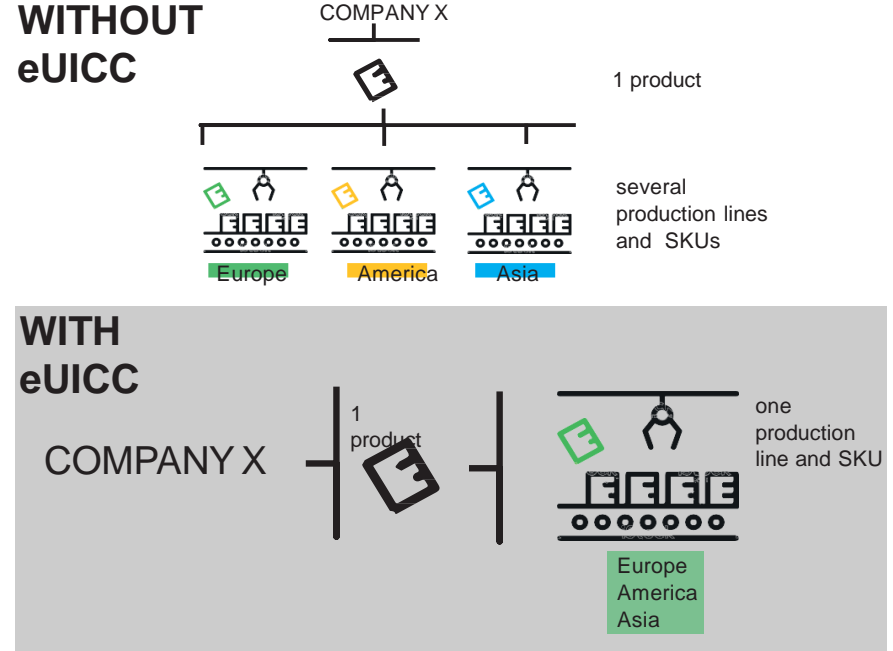
eUICC –
Full flexibility in product life-cycle unlocking market

AVeUICC3100

Preloaded with connectivity for test
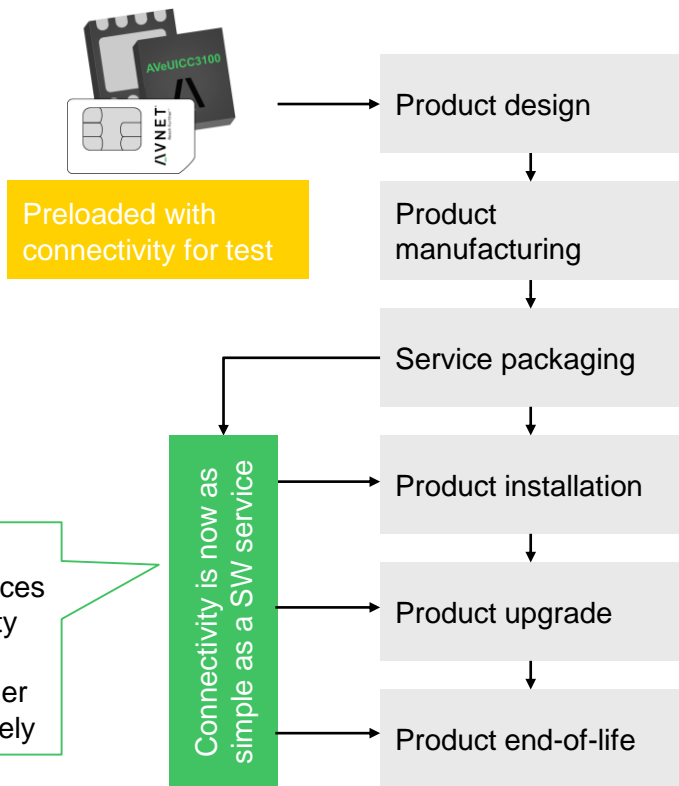
Leverage fleets of already deployed devices to optimize connectivity costs
Load and reload partner carriers profiles remotely

Connectivity is now as simple as a SW service

Product design

Product manufacturing

Service packaging

Product installation

Product upgrade

Product end-of-life

Company A

Home alarm system
Detectors, control unit

Companies B, C, D

Home Security Providers

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WINNER
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AVeUICC3100xxx product family

HW by INFINEON

SW by IDEMIA

	M2M Commercial	M2M Industrial	M2M Automotive
Segmentation	Tablet, cameras, navigation system, domestic connectivity etc.	Metering systems, health care, vending machines, heavy plant.	Telemetry, service, e-call, break-down call
Temperature range	-25 to 85 °C	-40 to 105°C	-40 to 105°C
Data retention	10 years	15 years	17 years
Form Factor	2FF, 3FF, 4FF, MFF2	2FF, 3FF, MFF2	MFF2
Compliant	ETSI TS 102 221 / MFF2 in accordance to ETSI TS 102 671	Fully compliant to ETSI TS 102 671	Additional Process & Quality documentation ISO TS 16949
ETSI TS 102 671 string	TS-RA-UB	TB-MA-HA-CA-VA-SA-RB-UC	TB-MA-HA-CA-VA-SA-RC-UC

Avnet confidential

eUICC for which networks

Low-Power
Wide Area Ntw
LPWAN
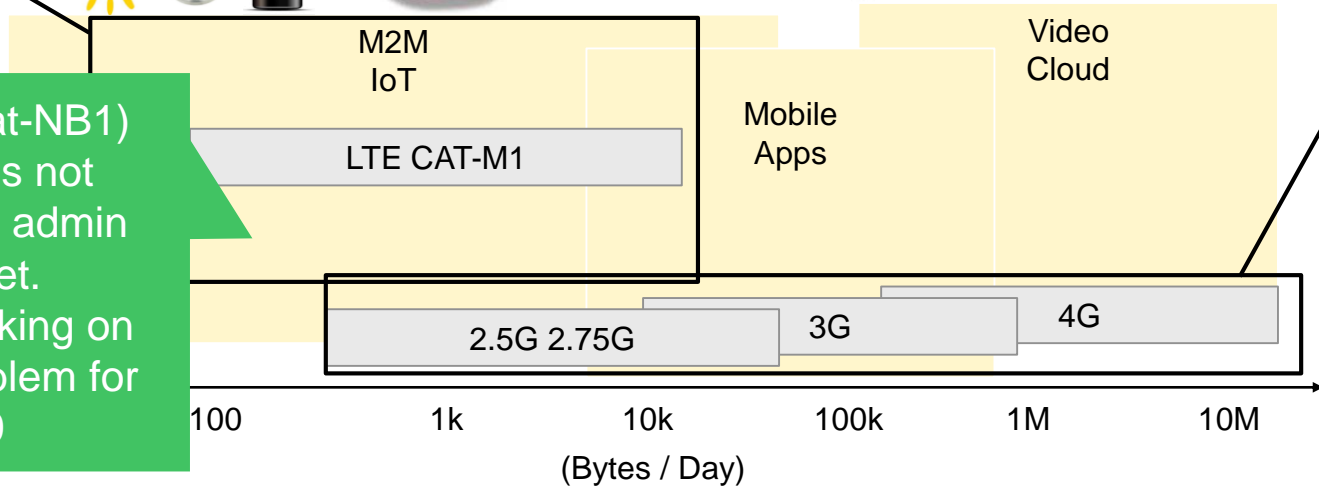
The NB-IoT (cat-NB1)
standard does not
support eUICC admin
services yet.
But we are working on
solving the problem for
Q2 2020

M2M
IoT

LTE CAT-M1

Mobile
Apps

Video
Cloud

Legacy
cellular

2.5G 2.75G

3G

4G

| 100 | 1k | 10k | 100k | 1M | 10M |

(Bytes / Day)

Qualified 3G modem

QUECTEL UG96

Avnet confidential

Qualified 4G modems

QUECTEL EC25 & EC21

QUECTEL EG91

QUECTEL EG95

Avnet confidential
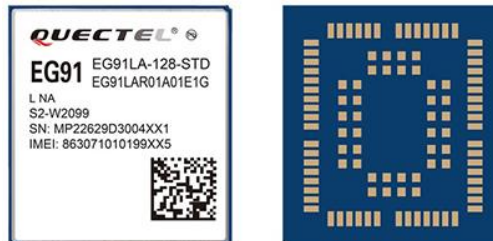
Qualified LPWAN modem

QUECTEL BG96

Your preferred modem is not listed here ?
Ask us!

How is the product packaged?
AVeUICC3100xxx product line

- An AVNET/IDEMIA eUICC chip
  - 2FF: Plastic format
  - MFF2: Chip format
  - MOQ: Boxes of 50 & 500, reels of 3K (MFF2 only)

+
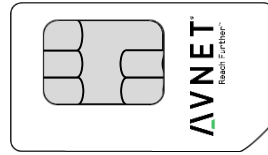
- Pre-installed profile (bootstrap) of partner carrier
- Pre-paid communication with this production carrier
  - To be used for the production factory test
- **First carrier change offered if first user does not want to use bootstrap carrier**
- **Unlimited provisioning of the eUICC on AVNET's SMSR for administration purposes**

+

xMB

010101
010101

Avnet confidential
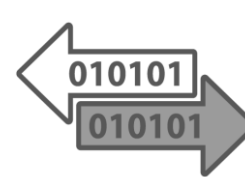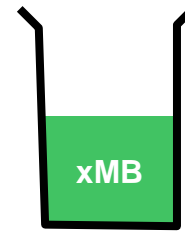
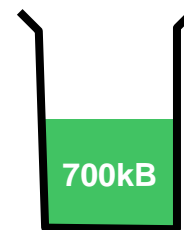# AVeUICC3100ARK – Available for sale!!
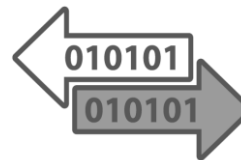
– An AVNET/IDEMIA eUICC chip

+
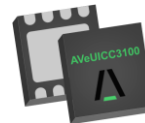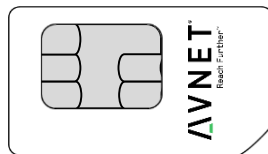
– 700kB of pre-paid communication worldwide
  – To be used for the production factory test
  – Valid for 3 months after activation
– Unlimited provisioning of the eUICC on AVNET's SMSR for administration purposes
– Optional services down the road:
  – ARKESSA profile used as a bootstrap: backup, services
  – Operator change campaigns
  – Download of applets*

(*)Avnet is the entry point for service operations throughout product life even if the product changes ownership from our direct customer to another entity
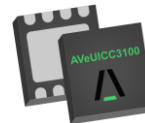
Avnet confidential

AVeUICC3100VOD – Available for sale!!
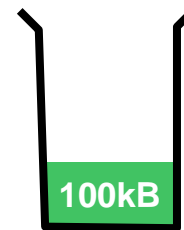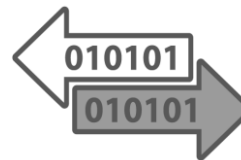
- An AVNET/IDEMIA eUICC chip

  +

- 100kB of pre-paid communication Europe + Asia
  - To be used for the production factory test
  - Valid for 3 months after activation

- Unlimited provisioning of the eUICC on AVNET's SMSR for administration purposes

- Optional services down the road:
  - Operator change campaigns
  - Download of applets*

(*) Avnet is the entry point for service operations throughout product life even if the product changes ownership from our direct customer to another entity
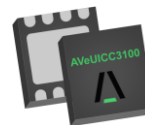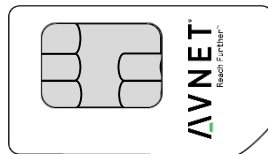
100kB

010101
010101

AVeUICC3200BICS – Available in Q2 2020
Global Cat-M (LTE-M) + 2G + 3G + 4G

- An AVNET/IDEMIA eUICC + low-power applet

    +

- 100kB of pre-paid communication worldwide
    - To be used for the production factory test
    - Valid for 3 months after activation

- Unlimited provisioning of the eUICC on AVNET's SMSR for administration purposes

- Optional services down the road:
    - Operator change campaigns
    - Download of applets*

(*) Avnet is the entry point for service operations throughout product life even if the product changes ownership from our direct customer to another entity

+

100kB

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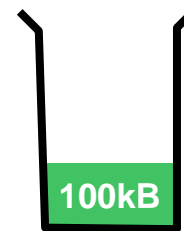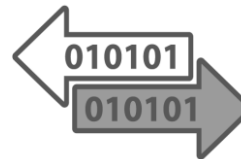
Avnet eUICC test pack – Available for sale !!

- 6 eUICC – 4x 2FF + 2x MFF2 each preloaded with the following:
  - 1 Vodafone test profile + 1 Arkessa test profile
  - 2x50 MB of pre-paid Vodafone & Arkessa data communication in Europe valid for 3 months after activation
- Vodafone & Arkessa test accounts for managing the Vodafone & Arkessa pre-paid connectivity: Profile activation, data usage, etc.
- On-demand eUICC administration services from Avnet: Profile download, swap between Vodafone and Arkessa, fallback mgmt, etc.

Avnet confidential

Operator roadmap

- We are in active negotiation with other operators to have them join the program:
  - Orange
  - Tata Comms
  - Tele2
  - 3HK
  - Telus
  - And this will be a continued process
- The idea is to have soon a broad offering of MNO/VNO able to answer market demands per geography and vertical in addition to ARKESSA and VODAFONE

bics

TELUS

3 Three.com.hk

TELE2

ARKESSA

Deutsche Telekom

vodafone

orange™

TIM

…

Q1 2019   H1 2020   H2 2020

Avnet eUICC program recognized by the IoT Innovator 2018

– Avnet eUICC has been named a Silver Winner in the Best IoT Network Solution – Commercial & Industrial for the '2018 IoT Innovator Awards' program

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Thank you!