Product change note

Topic	**TOBY/MPCI-L210-6XS, TOBY/MPCI-L220 product change notification**
	UBX-20058840 C1-Public
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1   Affected products

Product name	Ordering code	Old type number	Old FW version	New type number	New FW version
TOBY-L210	TOBY-L210-65S	TOBY-L210-65S-00	16.05 A01.05	TOBY-L210-65S-01	16.75 A01.00
TOBY-L220	TOBY-L220-02S	TOBY-L220-02S-00	15.93 A01.04	TOBY-L220-02S-01	16.25 A01.00
TOBY-L220	TOBY-L220-62S	TOBY-L220-62S-00	16.04 A01.02	TOBY-L220-62S-01	16.50 A01.00
MPCI-L210	MPCI-L210-63S	MPCI-L210-63S-00	09.94 A01.07	MPCI-L210-63S-01	09.95 A01.01
MPCI-L220	MPCI-L220-02S	MPCI-L220-02S-00	15.93 A01.04	MPCI-L220-02S-01	16.25 A01.00
MPCI-L220	MPCI-L220-62S	MPCI-L220-62S-00	16.04 A01.02	MPCI-L220-62S-01	16.50 A01.00

☞   The new FW version can be used to update an old type number (field update).

Table 1: Affected products in production

2   Type

☐ Product status change   ☒ Documentation update
☒ Hardware/component change   ☐ Certification information
☒ Firmware/software update   ☐ Security advisory
☐ Label change   ☐ Other

3   Description

3.1   Hardware changes

The component supplier has announced end of life (EOL) of the MCP memory combo (NAND + LPDDR2) currently used in the affected products.

- [PCR54/PCR135] – Another equivalent MCP memory combo introduction.

3.2 Firmware changes

Forward compatibility with LTE cellular network

TOBY-L2 and MPCI-L2 series modules will include changes for tolerant handling of new system information block 24 messages (SIB24), which is introduced with 3GPP rel. 15 (or higher).

- [CA-90921 / u-blox ID-2 3492] In some mobile networks, when the LTE network deploys SIB24 for 4G-to-5G SA reselection, the module receives scheduling information in SIB1, which contains SIB Type = sibType24-v1530. The current firmware does not handle this newly defined value, which results in dropping the SIB1 message. Consequently, the cell that broadcasts SIB24 is considered as barred, and eventually the module will move to 2G or 3G network and lose 4G services. The new firmware properly handles the SIB24 value and prevents this condition.

Other product improvements (not applicable to FW version 09.95 A01.01)**:**

- [u-blox ID 3482]: Resolved an issue when a DSP reset might occur during cell reselection (intra-LTE handover).

Other product improvements (not applicable to FW versions 09.95 A01.01 and 16.25 A01.00)**:**

- [CA-097663, CA-093095 / u-blox ID 3481] Fix for unexpected disconnection of UDP communication.

4 Schedule

Samples	Dates
IP release date:	27-May-2021
Estimated first shipment date:	27-Aug-2021
Documentation (e.g. release note)	Available

5 Certification

GITEKI certification numbers remain unchanged between old and new type number.

Certification scheme	TOBY-L210-65S-01	TOBY-L220-02S-01	TOBY-L220-62S-01
GITEKI (Japan)	•	•	•
NTT DoCoMo (MNO)			•
SoftBank (MNO)	•		

Table 2: Certification scheme for TOBY-L2 products

Certification scheme	MPCI-L210-63S-01	MPCI-L220-02S-01	MPCI-L220-62S-01
GITEKI (Japan)	•	•	•
NTT DoCoMo (MNO)			•
SoftBank (MNO)	•		

Table 3: Certification scheme for MPCI-L2 products

6 Customer impact and recommended action

To eliminate the risk of facing incompatibility issues with certain MNO networks [CA-90921], it is strongly recommended to apply the firmware update to all products in the field. Applying updates does not affect modem performance and there are no changes to interfaces.

The mentioned hardware changes do not affect the EMC properties of the modem. All process properties remain unchanged and no adaptation to the production process is needed (e.g. solder profile).

The new firmware version can be applied to older type numbers, as outlined in section 7.1.

Certification impact:

- Mobile Network Operators (MNO) approvals:
  - Mobile Network Operators approvals of the modules have been updated.
  - u-blox recommends that integrators having any MNO approvals in place for the host product notify the related Mobile Network Operator of the change in the product (no testing is expected, paperwork only).
- Country regulatory approvals:
  - Country regulatory approvals of the modules remain valid.
  - u-blox recommends that integrators check with their preferred certification body to find out if any action is needed for the regulatory approvals of the host product.

7 Firmware update

New firmware can be used to update old type number modules (list of modules to which firmware update is applicable is specified in the table below).

7.1 Products no longer in production

Product name	Ordering code	Type number	FW version released earlier		New FW
TOBY-L210	TOBY-L210-62S	TOBY-L210-62S-00	16.05 A01.02	16.05 A01.05	16.75 A01.00
MPCI-L210	MPCI-L210-60S	MPCI-L210-60S-00	09.94 A01.00		09.95 A01.01
MPCI-L210	MPCI-L210-60S	MPCI-L210-60S-01	09.94 A01.01	09.94 A01.08	09.95 A01.01
TOBY-L210	TOBY-L210-60S	TOBY-L210-60S-00	09.94 A01.00		09.95 A01.01
TOBY-L210	TOBY-L210-60S	TOBY-L210-60S-01	09.94 A01.01	09.94 A01.08	09.95 A01.01

Table 4: Products that can be updated with new FW but are no longer in production

7.2 How to apply new firmware in field

- Customers can apply the new firmware to the modules in the field via FOAT (+UFWUPD AT command) and FOTA (+UFWINSTALL AT command). For more information, see u-blox AT commands manual [1] and u-blox cellular modules firmware update application note [5].
- All needed files (*.bin or *.zip) are provided by u-blox together with the md5 to be used in the related AT commands.

☞ **Note: warning for FOTA:**

- When using FOTA (+UFWINSTALL) it is important to check the status of the cache partition first. In rare cases this cache partition can become damaged or be removed. This is typically caused by an improper power on/off sequence applied to the module.

Checking status of the cache partition

- If `AT+ULSTFILE=1,"RAMDUMP"` returns a value other than zero, then the update is safe. This indicates there is an intact cache partition, and the firmware update can be performed.
- If `AT+ULSTFILE=1,"RAMDUMP"` returns 0, then the update is not safe. A value of 0 indicates that there is no available memory space in the cache partition (cache partition has been damaged/removed). In this case, please contact u-blox technical support.

7.3 Firmware update packages and md5 signature

Product/delivery	File name	md5sum
TOBY-L210-65S-01		
EasyFlash	TOBY-L210-65S-01_FW16.75_A01.00_IP.dof	dadf764fd270868e436f6e3863cc34d9
FOTA (+UFWINSTALL)	TOBY-L210-65S-01_FW16.75_A01.00_IP_UFWINSTALL.zip	a5a9fa3ed918022efa9b93dd0e1c7e5d
FOAT (+UFWUPD)	TOBY-L210-65S-01_FW16.75_A01.00_IP_UFWUPD_128.bin	4fef8f9add9a65e7b1803a30878c7aa2
	TOBY-L210-65S-01_FW16.75_A01.00_IP_UFWUPD_1K.bin	7e2acbb0b217bd01ce9aad98a4fbe15f
TOBY-L220-02S-01		
EasyFlash	TOBY-L220-02S-01_FW16.25_A01.00_IP.dof	e061f1e0bd14c63a29975f0c6f8a38f0
FOTA (+UFWINSTALL)	TOBY-L220-02S-01_FW16.25_A01.00_IP_UFWINSTALL.zip	72bc6a8185c71c8e9ea0d5b152f4342d
FOAT (+UFWUPD)	TOBY-L220-02S-01_FW16.25_A01.00_IP_UFWUPD_128.bin	738d0e1d6cabd8add20d9ff99c4a29f5
	TOBY-L220-02S-01_FW16.25_A01.00_IP_UFWUPD_1K.bin	205a74278bf93ee9fe0aa41839606c87

Product/delivery	File name	md5sum
TOBY-L220-62S-01		
EasyFlash	`TOBY-L220-62S-01_FW16.50_A01.00_IP.dof`	9e225f4e39a58b456aeac5f05e2bd6d0
FOTA (+UFWINSTALL)	`TOBY-L220-62S-01_FW16.50_A01.00_IP_UFWINSTALL.zip`	e25cbedb53a0e03c4c7e47f129433568
FOAT (+UFWUPD)	`TOBY-L220-62S-01_FW16.50_A01.00_IP_UFWUPD_128.bin`	679ebabe7ec69bf718e8e66e645fa514
	`TOBY-L220-62S-01_FW16.50_A01.00_IP_UFWUPD_1K.bin`	785749519fd414b02fae7b6bc012cd8d
MPCI-L210-63S-01		
EasyFlash	`MPCI-L210-63S-01_FW09.95_A01.01_IP.dof`	6c0cb4c464dbcca69d2bab29e0080ec6
FOTA (+UFWINSTALL)	`MPCI-L210-63S-01_FW09.95_A01.01_IP_UFWINSTALL.zip`	00884e4b33e8b4754e9955d83457ec50
TOBY-L210-60S		
EasyFlash	`TOBY-L210-60S-01_FW09.95_A01.01_IP.dof`	a1619887175cb164661e74c9ed001358
FOTA (+UFWINSTALL)	`TOBY-L210-60S-01_FW09.95_A01.01_IP_UFWINSTALL.zip`	34140550a1e57ba9b9be527535d4bf90
TOBY-L210-62S-00		
EasyFlash	`TOBY-L210-62S-00_FW16.75_A01.00_IP.dof`	8c1fcd19d993d9c5c7e0288d555c5c55
FOTA (+UFWINSTALL)	`TOBY-L210-62S-00_FW16.75_A01.00_IP_UFWINSTALL.zip`	797541bb5f3c10ab40cbc3fdbe66c275
FOAT (+UFWUPD)	`TOBY-L210-62S-00_FW16.75_A01.00_IP_UFWUPD_128.bin`	aa495a252126aab54bc3136f1e869f7d
	`TOBY-L210-62S-00_FW16.75_A01.00_IP_UFWUPD_1K.bin`	3558eb66b9f5cac3a7896ab6335fa6bd

8 Tools

- m-center v.02.04.00 – Download from the u-blox.com website via this page: m-center
- EasyFlash v12.10 – Download from the u-blox.com website via this link: EasyFlash

9 Related documentation

[1] u-blox AT commands manual, UBX-13002752
[2] u-blox TOBY-L2 series data sheet, UBX-13004573
[3] u-blox MPCI-L2 series data sheet, UBX-13004749
[4] u-blox TOBY-L2 / MPCI-L2 series system integration manual, UBX-13004618
[5] u-blox firmware update application note, UBX-13001845