CloudLink Cat M1 Modem
R110
Software Change Notice

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Notices and Trademarks

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Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user, often in terms of performing a task.
	REFERENCE -EXTERNAL: Identifies an additional source of information outside of the bookset.
	REFERENCE - INTERNAL: Identifies an additional source of information within the bookset.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.
	CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. **CAUTION** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. **WARNING** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING, Risk of electrical shock: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	ESD HAZARD: Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	Protective Earth (PE) terminal: Provided for connection of the protective earth (green or green/yellow) supply system conductor.

Symbol	Definition
⏚	**Functional earth terminal**: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
⏚	**Earth Ground**: **Functional earth connection.** NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
⏚	**Chassis Ground**: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

Contents

1   Introduction

1.1   About CloudLink Cat M1 Modem

CloudLink is a future proof intrinsically safe cellular radio (CloudLink) with form factor, certifications and carrier approvals that can also be used as a component in a variety of industrial process control and monitoring applications and wireless platforms.

CloudLink can be used with wireless applications with cellular and BLE.

1.2   About this Document

The CloudLink R110 Release Notes is intended for service engineers who are assigned to provision, configure, operate CloudLink Cat M1 device

1.3   Limitations

N/A

1.4   Technical Assistance

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2   Contents of Release

CloudLink R110 Firmware version is v1.02.12

Table 1 CloudLink Cat M1 Modem

Product	Part Number
CloudLink- R110 Hex file	51121638-100
CloudLink- R110 Bin file	51121638-200

3   Release Overview

3.1   Features

Key features of CloudLink are mentioned below:

1. Cellular Communication
    - Supported Bands:
        i. LTE(CatM1)   : Band 13.
2. Supports IPv4 Internet Protocols
3. Call in / Call out
    - CloudLink Supports Call in (CloudLink device connects to the host system (PowerSpring) over IPv4 through LTE(CatM1).
    - CloudLink Supports Call Out (CloudLink listens for connections from the host system (MasterLink / PowerSpring) over IPv4 through LTE(CatM1).

4. Bluetooth Low Energy (BLE) communication
    - Bluetooth Low Energy Communication is short range wireless communication used for communicating with Mobile devices, Mobile Tabs
5. Serial Communication
    - RS232 Interface
    - RS485 Interface
6. Firmware upgrade
    - CloudLink device firmware can be upgraded remotely using Cellular Interface (Over The Air) by host software (MasterLink/CloudLink Connect)
    - CloudLink firmware upgrade can also be done using RS232, RS485, BLE interfaces in the field.
7. Pulse Counting
    a. CloudLink Supports one pulse input, these pulse count can be read remotely by sending AT commands over serial interface
8. Diagnostics Support
    - CloudLink device has 4 LEDs used for various diagnostic indication
    - CloudLink device logs diagnostic information can be read remotely over cellular interface
9. Cellular Statistics
    - CloudLink device logs each call data like Access Technology, RSSI, Location ID / TAC, Cell ID, Physical Cell ID, MCC, MNC, Last Call Duration, Last Call Status
10. AT commands
    - Custom commands provided to read CloudLink Diagnostic and pulse count information

11. Alarms

- CloudLink generates alarms in case of Emergency call in (Magnetic switch call) and Low Battery Indication

12. Field / Remote Configuration

- Device can be configured remotely or in the field

13. Password protected communication

- Configuration Over Serial Interface, BLE, EC350 IR, Cellular Interface

14. Transparent modem

- CloudLink will act as integrated transparent modem, or standalone modem

15. Security

- Supports BLE Just Works and Passkey Entry
- Whitelisting

3.2   New Features

This release contains the following new enhancements:

3.2.1   New alarms types added. Item i3189 provides the active alarms conditions.

- Radio Power ON Failure
- SIM Card Error
- Radio Registration Failure
- Radio Module Not Responding
- Data Connection Failure
- Host Not Reachable - Call Failure

3.2.2   Network drop recovery mechanism, new item number i3193 introduced for recovering from network drop (RGASMETER-284)

S.NO	Description	Item number	Default value
1.	TCP server refresh configuration parameter	3193	1800 seconds
2.	DNS/Ping server IP address	3042	127.0.0.1
3.	DNS/Ping server IP address Enable to change default IP address	3036	Disable

Note:

1. ***Recovery mechanism works based on principle of creating a network traffic from the unit to cellular network at defined time interval to avoid out-off network for longer duration.***

2. *This is achieved through the item number i3193. TCP server is closed periodically for the time mentioned in the item number i3193 and opens TCP client and gets connect to the IP address mentioned in item number i3042. By doing this, unit will try to connect to the IP address mentioned in i3042 which creates a network traffic from the unit to cellular network.*

3. *The default IP address in i3042 can be changed only if i3036 is ENABLE.*

3.3   Changes to Existing Functionality

This release contains the following changes to existing functionality:

3.3.1   FOTA feature is improved in this build.

Refer to FOTA update Procedure from the FOTA update instructions

- To setup FTP server you can refer to our knowledge base article Setup FTP server with FileZilla.
- When FOTA is initiated, continuous server mode or call out window is closed and proceed with FOTA process. After FOTA process if continuous server mode is enabled, continue with continuous server mode.
- Event logs are enhanced for FOTA in this build.
- New Radio FW version is updated in item number i3021 after FOTA.

Note:
1. *To perform FOTA, firstly application FW must be upgrade with this build v1.02.12 using master link*
2. *Perform FOTA only if radio FW version in item number i3021 is other than 30.10.002-B003. This radio FW version is having a fix from radio vendor side for radio not responding and LED error code -12.*

3.3.2   AT command response timing delay increased as suggested by Telit radio vendor to prevent radio going into nonresponse state and need to upgrade radio FW version to *30.10.002-B003* through FOTA as mentioned in above point 3.3.1 note - 2. (RGASMETER - 444).

3.3.3   Changed firmware upgrade item number i3107 behavior as explained below:

Item number	Enum description	Default value
3107	Enable → Firmware upgrade on the unit is allowed.	Disable
	Disable → Firmware upgrade of the unit is not allowed.	

Note: After firmware upgrade item number i3107 is automatically reverted to default state.

3.3.4   Error shown in master link for FW upgrade, changed from access code error (error code 27) to data write denied (error code – 39).

3.3.5   Fix call-in failure (from not flushing comm buffers from previous call) (RGASMETER - 463)

3.3.6   Fix call-in failure (from premature cellular network registration timeout) (RGASMETER-491)

3.3.7   Fix call-in failure (from premature IP packet time-out - call dropped and reported as Network Read/Write error in PS)

3.3.8   Fix call-in failure (from sending RG packets out of order - call dropped and reported as BAD CRC error in PS) (RGASMETER-476)

3.3.9   Fix to preserve item 3113 pulse count through soft reset operation

3.3.10   Fix BLE start/stop time functionality

3.3.11   Fix BLE pass-through to instrument disable (3162=0 was not blocking it as intended)

3.3.12   Fix duplicate cellular logs for same call

3.3.13   Fix call duration in cellular logs

3.4   Retired Features

The following features and functions have been removed from the release:
N/A

4 Software/Hardware/Firmware Compatibility

Description	Release / Version
CloudLink Power board	Rev A
CloudLink Radio board	Rev A
MasterLink	Software utility R515.1, Build version: 15.1.35.0
PowerSpring	R301.1
EC350 R100 release HW	Rev E
EC350 R144 and R147 release FW	1.4410, 1.4712
MiWireless with MiniMax	MiniMax FW version 2.97
MiWireless with ERX	ERX FW version 3.3201
CNI4	v3.1303

5 Documentation Updates/Additional Information

N/A

6 Problems Resolved

This section provides an overview of the problems resolved in this release.

S.NO	Description	ID's
1	CL R110 Modem Error 12	**RGASMETER - 444**
2	CloudLink causing call in failure (not flushing comm buffers from previous call)	**RGASMETER - 463**
3	CLR110 - call in failure due to registration timeout	**RGASMETER - 491**
4	CloudLink R110: packets out of order causing call failure with PS (BAD CRC)	**RGASMETER – 476**
5	CL R110 Cat M1 4G modem won't stay on the cellular network	**RGASMETER – 284**

7   Installation and Migration

N/A

8   Un-Install Instructions

N/A

9   Issues

N/A

10   Security-Related Issues

N/A

11   Special Considerations

N/A

12   Third-Party Software Components

N/A

13   Appendix
N/A

14   Milestone Completion Checklist

Software Change Notices are directly related to a specific release. The criteria for assessing SCNs are not dependent on the phase.

Construction

For most HIP types, the draft SCN for the <u>final</u> release shall be available by end-of-construction and shall include content in all sections.

For the Express Delivery HIP type, which features only a Construction phase, the draft SCN needs to be complete as builds are turned over to Test, who then verifies the work product as a part of the test efforts.

Phase in which Release Occurred

Process Compliance Checklist High Level Evaluation Criterion:

- Software Change Notice prepared & reviewed prior to gaining acceptance to Release.

Content at Milestone	Comments (optional)
All sections completed. The hidden test within this document should be used when reviewing content.	
Collaboration per the collaboration process requirements. The hidden text within this document should be used when reviewing content.	Check for evidence of review & that resulting issues have been tracked-to-closure.