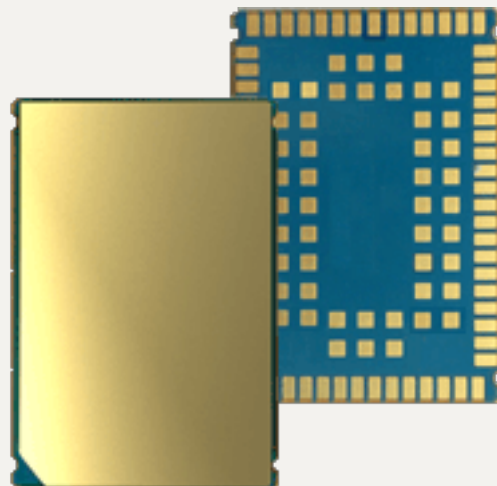


Cinterion[®] EXS62-W/EXS82-W

Release Notes

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1. Introduction

This Release Note refers to the Thales LTE modules

Cinterion® EXS62-W v01.100

Cinterion® EXS82-W v01.100

Firmware Revision: 01.100

Application Revision Number: 01.000.08

1.1 Related Documents

- [1] Cinterion® EXS62-W Hardware Interface Description, v01.100a
Cinterion® EXS82-W Hardware Interface Description, v01.100a
- [2] Cinterion® EXS62-W AT Command Specifications, v01.100a
Cinterion® EXS82-W AT Command Specifications, v01.100a
- [3] Differences between selected Cinterion® Modules, Hardware Migration Guide, v14
- [4] Getting Started with Cinterion® EXSx2-W, v01
- [5] Cinterion® IoT Suite User Guide for EXSx2-W Modules, v01
- [6] Application Note 16: Updating Firmware for Cinterion® EXSx2-W Modules
- [7] Application Note 26: Power Supply for Wireless Applications, v11
- [8] Application Note 40: Thermal Solutions for Cinterion® EXSx2-W Applications, v01
- [9] Application Note 45: Jamming Detection - Radio Link Stability, v01
- [10] Application Note 48: SMT Module Integration, v08
- [11] Application Note 60: At Command Response Timeouts, v05
- [12] Application Note 62: Transport Layer Security for Client TCP/IP Services, v01
- [13] Application Note 88: ODIS/DHIR/Portfolio Management via LwM2M, v01
- [14] Application Note 95: Power Saving for LTE Cat M1 and LTE Cat NB1/2 Modules, v01

2. New Features

The following table lists new features for the firmware release v01.100.

Feature	Brief description
GPIO	<p>Seven external GPIOs (GPIO6-7, GPIO20-23, GPIO25) are available.</p> <p>For details on the AT commands to control and configure these GPIOs - amongst others AT^SCPIN – please refer to [2].</p>
MIM	MIM form factor MFF-XS replaces MFF2.
Multislot class	The module supports GSM/GPRS/EGPRS Multislot Class 12.
Non IP data delivery (NIDD)	The module supports NIDD using both SCEF (control plane) based delivery mechanisms as well as SGi (user plane) based delivery mechanisms defined in 3GPP TS23.401 Rel.14 Section 4.3.17.8, and implement standard 3GPP AT commands to support NIDD over control plane as defined in 3GPP TS 27.007 Rel.14 or later.
USIM application toolkit (USAT)	<p>The module supports USAT functionality according to 3GPP TS 31.111, Release 13.</p> <p>For details on commands to manage USAT please refer to [2].</p>
Radio assistance indicator (RAI)	The module supports 3GPP Rel.14 (RAI) as defined in 3GPP TS 36.321 and TS36.331 by default.
GNSS	<p>The module supports configurable output of NMEA sentences. The GNSS receiver uses the latest NMEA-0183 protocol format and supports the NMEA sentences GSV, GSA, GGA, RMC, and VTG for GPS.</p> <p>For details on the AT command to configure GNSS usage, AT^SGPSC, please refer to [2].</p>
Internet services	<p>The module supports the transport layer security protocol extension Server Name Indication (SNI). SNI allows to transfer a hostname to an attendant server. The behavior of the SNI extension is defined by RFC6066.</p> <p>For a URL length longer than 511 characters it is possible to split the URL string into up to four chunks, each up to 511 characters. To program all these chunks, add three additional address parameters for service configuration via AT^SISS.</p>

3. Improved Features

The following table lists features for firmware release v01.100 that were improved since the previous preliminary firmware release, i.e., EXSx2-W v01.003.

Feature	Brief description
GNSS	When activating the GNSS engine, and before a proper location fix, the module no longer temporarily issues un-precise location information in NMEA sentences.
AT^SICA	Continuously and rapidly deactivating and activating Internet service connections no longer leads to a failure of the module to activate data call connections.
IPv6	It is now possible to re-open a TCP listener service at the same port immediately after closing a previous one without the TCP transparent listener status being sometimes shown incorrectly.
Cinterion® IoT Suite	Cinterion® IoT Suite has been improved - including FOTA update.
AT^SICS AT^SISX	Manual DNS settings done with AT^SISC are now used in IP services, e.g., HostByName services provided with AT^SISX.
FTP	TLS is no longer enabled unexpectedly during FTP transfer after switching from FTPES to FTP service.
AT+CEDRXRDP	AT+CEDRXRDP no longer shows eDRX as supported even if the serving cell does not support eDRX.
AT^SICA	Activating and deactivating a PDP context based Internet connection for more than 20 times in rapid succession no longer leads to the connection being blocked. This may only happen after 30 attempts because of RPM policy.
+++ ATO	Switching between data and AT command mode in close succession for a longer period of time no longer leads to the module's accepting no further AT commands at all.
MUX	MSC frames when toggling DTR are now sent correctly.

Feature	Brief description
LWM2M	<p>If a handshake between:</p> <ul style="list-style-type: none"> - LWM2M client to LWM2M server or - LWM2M client to FOTA server <p>is lost, the related LWM2M service is stopped. A timer is implemented to supervise the LWM2M service. After timeout the server tries to re-push URI in case the firmware update object's 5/0/3 (State) and 5/0/5 (Update Result) resource values are 0.</p> <p>In this case, the server no longer treats the module as working in conditional FOTA.</p> <p>If changing the radio access technology (RAT) during operation the Lwm2M client now works properly.</p> <p>After firmware update over-the-air (FOTA) the successful update is now reported by URC.</p>
GNSS	<p>To improve GNSS startup time, the module's GNSS receiver will normally download some predicted GNSS satellite orbit data in the background on startup.</p> <p>In case the download fails for some reason, e.g., due to network issues, the startup will no longer be delayed by approximately 35s.</p>
AT^SISW	<p>AT^SISW no longer returns an error with FTPES because the ^SISW URC is provided before the data channel handshake is ready.</p>
Turn off procedures	<p>Abrupt power cutoff is not supported by NAND flash. However, it is now tolerated by the module - even if not recommended.</p>
FTP	<p>The module's FTP service does now support file names containing blanks.</p>
DCD0	<p>DCD0 is now toggled when setting up PPP via Mux on ASC0.</p>
Loading/Installing certificates	<p>Loading certificates continuously (>60 times) no longer causes a module reboot.</p>

4. Known Issues

The following table lists known issues with the firmware release v01.100.

Feature	Brief description
Cinterion® IoT Suite	<p>The Cinterion® IoT Suite functionality is generally working, with some limitations:</p> <ul style="list-style-type: none"> - After logging into the IoT Suite server, the software download may sometimes not start. - A IoT Suite job may get stuck when a client service is stopped and started during download - LwM2M client cannot work normally after changing RAT - FOTA download process does not continue after a radio link loss is restored, e.g., as a result of a module restart.
Temperature behaviour	The module may sometimes fail to attach to 2G network at low temperatures (<-5°C).
RSA Explicit Response (ER) mode	<p>The SAT command Setup Event List is not answered successfully in ER mode (i.e., ^SSTN: 5 does not pop up after module startup in ER mode).</p> <p>This happens because not all SAT commands support ER mode, even if the module is switched to this mode.</p>
AT^SIND NITZ indicator	<p>The “nitz” indicator parameter <nitzDST> is not displayed in the AT^SIND URC"+CIEV" when the module receives the DST parameter from the network.</p> <p>Workaround: Please use the command AT+CTZU to enable automatic time zone updates via NITZ, and receive the <nitzDST> parameter via the +CTZU URC.</p>
UDP packet transfer	Changing the <bufsize> parameter over a UDP socket connection to a lower buffer size value (i.e., <150 bytes) may lead to data transmissions being impacted because packages are no longer transferred completely.
Power saving mode (SUSPEND)	If SUSPEND mode is enabled, the module will be deregistered from some networks after the active timer of the PSM mode has elapsed - instead of entering the configured 3GPP PSM SUSPEND mode.
ASC0 Rx	The module's ASC0 line CTS0 may in some cases not operate properly during TCP transparent mode. This may cause the serial interface's reception to hang.

Feature	Brief description
Bootstrap server	<p>The module can delete mandatory objects (for example /4, /5, /6, /7) as required by the bootstrap server, and may thus trigger the loss of mandatory features (for example: FOTA /5).</p> <p>The bootstrap server should avoid deleting those objects, and also avoid delete all (delete /) operations.</p>
AT\Q	RTS/CTS hardware flow control on ASC0 MUX port does not work.
AT^SISD and AT^SISU	If during active MQTT connection between client and server the connection gets disconnected (due to e.g. network lost) and the related URC (e.g. ^SIS: 1,0,13,"The network is unavailable") occurs, the user should not continue send dynamic request to server. Otherwise there might be restart of the module.
URC “^SCTM_B:” and ^SBC:”	The under-, and overvoltage as well as the temperature checks are aligned to eDRX cycles to reduce power consumption. Thus, the module will not wake up specifically for under-, and overvoltage as well as the temperature checks. Timings described in [1] are valid as long as the module is not in any power save mode.
No fall back to TLS v1.1	If the remote server supports TLS v1.1 only, and the module client's IP Service request to connect via TLS v1.2, the module will not fall back to TLS v1.1 to retry the connection setup if the TLS v1.2 connection failed.
AT+CGCONTRDP	AT+CGCONTRDP does not display the APN parameter when register to 2G network. You can use AT+CGDCONT? to read the defined APN.
GNSS	If setting LTE priority instead of GNSS priority using the command AT^SCFG="MEopMode/RscMgmt/RrC", the activation of the GNSS engine might fail because of network activity.
GNSS	<p>After starting the GNSS engine using the AT command AT^SGPSC="Engine", it may in rare cases happen that no NMEA sentences are put out.</p> <p>If after about 2 minutes there is still no NMEA output you may try any of the three following options in that order as a workaround:</p> <ol style="list-style-type: none"> 1. Restart the GNSS engine 2. Re-register to another GSM/LTE network 3. Change to an open sky location

Feature	Brief description
GLONASS SV ID	The SV ID of Glonass satellites in NMEA sentences are not in the range of 65-96, user should add the offset 64.
AT^SGPSC="Power/Psm"	The default setting of AT^SGPSC="Power/Psm" is "1" and not "0" as shown in [2].
DCD line	The status of DCD line is "ON" after closing an UDP connection. With UDP service, the DCD line will not change to "off" immediately after the UDP connection is closed, but requires a further close action.



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