



# Test server configuration

**Test server for cellular data modules**

Application note

## **Abstract**

This document describes how to test TCP and UDP connections with an IP based test server operated by u-blox.

# Document information

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This document applies to the following products:

<b>Product name</b>
LARA-R2 series
LEON-G1 series
LEON-G2 series
LISA-U1 series
LISA-U2 series
LISA-C2 series
SARA-G340 series
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SARA-N3 series
SARA-R4 series
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# 1 Introduction

## 1.1 Scope

This document describes an IP-based test server operated by u-blox, for testing TCP and UDP based connections.

## 1.2 Purpose

The purpose of the test server is to have a way to execute simple tests and operations using the TCP/IP and UDP/IP AT commands of u-blox's cellular data modules on an IPv4 or IPv6 network. Usually, test steps are the following:

- Set up a data connection.
- Create one or more sockets (UDP or TCP).
- Connect the created socket or multiple sockets.
- Read / write operations on the socket (plain text).
- Close the socket.

## 2 Test server services

### 2.1 Service Level

The service is operated on a “best efforts” basis. If the service is unavailable, please contact [support@u-blox.com](mailto:support@u-blox.com).

### 2.2 Access

All access is anonymous. No logins, passwords or any other form of credentials need to be provided.

### 2.3 Privacy


u-blox reserves the right to log data that is being sent back and forth between the server and a connecting device, as well as meta information (time of connection, connecting IP number). If this is unacceptable for your purposes, please refrain from using this service.

### 2.4 Services

Two different services, both on UDP and TCP protocols, are available:

- Echo (on port 7) – a simple service that returns whatever is being sent to it.
- Daytime (on port 13) – a service that returns the current time at the server.

The services available follow the Internet standards for echo (RFC 862) and daytime (RFC 867).

 The AT command sequences in the following section are given just as an example and apply to LARA-R211-02B and SARA-R510M8S-00B products. See the u-blox AT commands manual [\[1\]](#) for detailed command descriptions and product applicability.

## 2.4.1 Echo service configuration

Item	Value	Comments
Protocol	TCP, UDP, IPv4, IPv6	
Server name	echo.u-blox.com	Do not use IP addresses, always perform DNS lookups.
Port	7	

### 2.4.1.1 IPv6 TCP echo service example

**Function:** with this example it is possible to send an initial greeting message. After that, it echoes data received upon detection of a newline character.

Command	Response	Description
AT+USOCR=6	+USOCR: 0 OK	Create a TCP socket.
AT+UDNSRN=0,"echo.u-blox.com"	+UDNSRN: "2a0b:ad40:1:2000::89" OK	DNS resolution of the URL.
AT+USOCO=0,"2a0b:ad40:1:2000::89",7	OK +UUSORD: 0,28	Connect to server.
AT+USORD=0,28	+USORD: 0,28,"u-blox TCP/UDP test service" OK	Greeting message is received.
AT+USOWR=0,4,"Test"	+USOWR: 0,4 OK +UUSORD: 0,4	Write 4 characters.
AT+USORD=0,4	+USORD: 0,4,"Test" OK	Read 4 echoed characters.
		The TCP connection needs to be properly terminated by the client.

### 2.4.1.2 IPv4 UDP echo service example

**Function:** All the UDP packets received by the server will be returned to the sender.

Command	Response	Description
		The module is already registered on the network, and a data connection is active.
AT+USOCR=17	+USOCR: 0 OK	Create a UDP socket.
AT+UDNSRN=0,"echo.u-blox.com"	+UDNSRN: "195.34.89.241" OK	DNS resolution of the URL.
AT+USOST=0,"195.34.89.241",7,5,"Hello"	+USOST: 0,5 OK +UUSORD: 0,5	Write 5 characters to server.
AT+USORF=0,5	+USORF: 0,"195.34.89.241",7,5,"Hello" OK	Read 5 echoed characters.

## 2.4.2 Daytime service configuration

Item	Value	Comments
Protocol	TCP, UDP, IPv4, IPv6	
Server name	echo.u-blox.com	Do not use IP addresses, always perform DNS lookups.
Port	13	

### 2.4.2.1 IPv4 TCP daytime service example

**Function:** with this example it is possible to send an initial greeting message. After that, the current local time of the server is returned (in ASCII format) and the connection is terminated by the server.

Command	Response	Description
		The module is already registered on the network, and a data connection is active.
AT+USOCR=6	+USOCR: 1 OK	Create a TCP socket.
AT+UDNSRN=0,"echo.u-blox.com"	+UDNSRN: "195.34.89.241" OK	DNS resolution of the URL.
AT+USOCO=1,"195.34.89.241",13	OK	Connect to server.
	+UUSORD: 1,28	
AT+USORD=1,28	+USORD: 1,28,"u-blox TCP/UDP test service" OK	Greeting message is received.
	+UUSORD: 1,27	
AT+USORD=1,27	+USORD: 1,27,"25 JUN 2014 10:42:41 CEST" OK	Local server time received.
	+UUSOCL: 1	Remote socket closure is notified.


### 2.4.2.2 IPv6 UDP daytime service example

**Function:** Each receipt of a UDP packet is followed by a reply with the current local time of the server (in ASCII format).

Command	Response	Description
		The module is already registered on the network, and a data connection is active.
AT+USOCR=17	+USOCR: 0 OK	Create a UDP socket.
AT+UDNSRN=0,"echo.u-blox.com"	+UDNSRN: "2a0b:ad40:1:2000::89" OK	DNS resolution of the URL.
AT+USOST=0,"2a0b:ad40:1:2000:: 89",13,5,"Hello"	+USOST: 0,5 OK	Write 5 characters to the server.
	+UUSORD: 0,27	
AT+USORF=0,27	+USORF: 0,"2a0b:ad40:1:2000::89 ",13,27,"16 APR 2021 15:00:27 CEST" OK	Local server time received.

## Related documentation

[1] u-blox AT commands manual, [UBX-13002752](#)

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## Revision history

Revision	Date	Name	Comments
-	02-Dec-2009	fmad	Initial release (Last revision with old doc number, GSM.G1-CS-09012)
R02	25-Jul-2014	mace	Document applicability extended to all cellular modules
R03	17-May-2021	mreb	Document applicability extended to all cellular modules and IPv6 protocol



# Contact

For complete contact information, visit us at [www.u-blox.com](http://www.u-blox.com).

## u-blox Offices

### North, Central and South America

#### u-blox America, Inc.

Phone: +1 703 483 3180  
Email: [info\\_us@u-blox.com](mailto:info_us@u-blox.com)

#### Regional Office West Coast:

Phone: +1 408 573 3640  
Email: [info\\_us@u-blox.com](mailto:info_us@u-blox.com)

#### Technical Support:

Phone: +1 703 483 3185  
Email: [support@u-blox.com](mailto:support@u-blox.com)

### Headquarters

#### Europe, Middle East, Africa

#### u-blox AG

Phone: +41 44 722 74 44  
Email: [info@u-blox.com](mailto:info@u-blox.com)  
Support: [support@u-blox.com](mailto:support@u-blox.com)

### Asia, Australia, Pacific

#### u-blox Singapore Pte. Ltd.

Phone: +65 6734 3811  
Email: [info\\_ap@u-blox.com](mailto:info_ap@u-blox.com)  
Support: [support\\_ap@u-blox.com](mailto:support_ap@u-blox.com)

#### Regional Office Australia:

Phone: +61 3 9566 7255  
Email: [info\\_anz@u-blox.com](mailto:info_anz@u-blox.com)  
Support: [support\\_ap@u-blox.com](mailto:support_ap@u-blox.com)

#### Regional Office China (Beijing):

Phone: +86 10 68 133 545  
Email: [info\\_cn@u-blox.com](mailto:info_cn@u-blox.com)  
Support: [support\\_cn@u-blox.com](mailto:support_cn@u-blox.com)

#### Regional Office China (Chongqing):

Phone: +86 23 6815 1588  
Email: [info\\_cn@u-blox.com](mailto:info_cn@u-blox.com)  
Support: [support\\_cn@u-blox.com](mailto:support_cn@u-blox.com)

#### Regional Office China (Shanghai):

Phone: +86 21 6090 4832  
Email: [info\\_cn@u-blox.com](mailto:info_cn@u-blox.com)  
Support: [support\\_cn@u-blox.com](mailto:support_cn@u-blox.com)

#### Regional Office China (Shenzhen):

Phone: +86 755 8627 1083  
Email: [info\\_cn@u-blox.com](mailto:info_cn@u-blox.com)  
Support: [support\\_cn@u-blox.com](mailto:support_cn@u-blox.com)

#### Regional Office India:

Phone: +91 80 405 092 00  
Email: [info\\_in@u-blox.com](mailto:info_in@u-blox.com)  
Support: [support\\_in@u-blox.com](mailto:support_in@u-blox.com)

#### Regional Office Japan (Osaka):

Phone: +81 6 6941 3660  
Email: [info\\_jp@u-blox.com](mailto:info_jp@u-blox.com)  
Support: [support\\_jp@u-blox.com](mailto:support_jp@u-blox.com)

#### Regional Office Japan (Tokyo):

Phone: +81 3 5775 3850  
Email: [info\\_jp@u-blox.com](mailto:info_jp@u-blox.com)  
Support: [support\\_jp@u-blox.com](mailto:support_jp@u-blox.com)

#### Regional Office Korea:

Phone: +82 2 542 0861  
Email: [info\\_kr@u-blox.com](mailto:info_kr@u-blox.com)  
Support: [support\\_kr@u-blox.com](mailto:support_kr@u-blox.com)

#### Regional Office Taiwan:

Phone: +886 2 2657 1090  
Email: [info\\_tw@u-blox.com](mailto:info_tw@u-blox.com)  
Support: [support\\_tw@u-blox.com](mailto:support_tw@u-blox.com)