



LabKit™

Laboratory Testing Equipment



 Quick Start Guide



**Congratulations for purchasing this LabKit™!
Please follow the steps below to get started.**

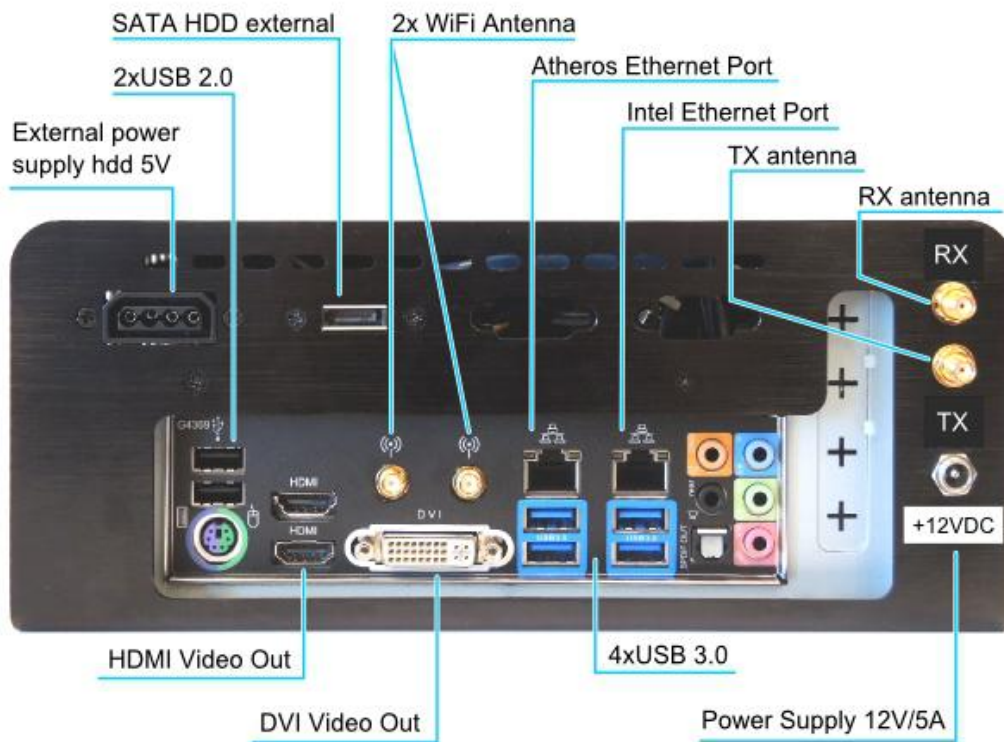


What you get

1. LabKit
2. LabKit power adaptor
3. two GSM antennas
4. two filters, one for use in the Americas (red) and one for the rest of the world (black)
5. two phones and their chargers
6. ten SIM cards (two of them are already written and inserted in the phones)
7. one Smart Card Reader
8. one Wi-Fi antenna

Important! Your YateBTS LabKit is also pre-configured to provide access to the Hosted Core, a free service that allows users to experiment with a fully-functional GSM/GPRS or LTE/IMS network. The 10 SIM cards you receive are already associated to your Hosted Core account. You will receive the Hosted Core credentials on the e-mail you used to place the order.

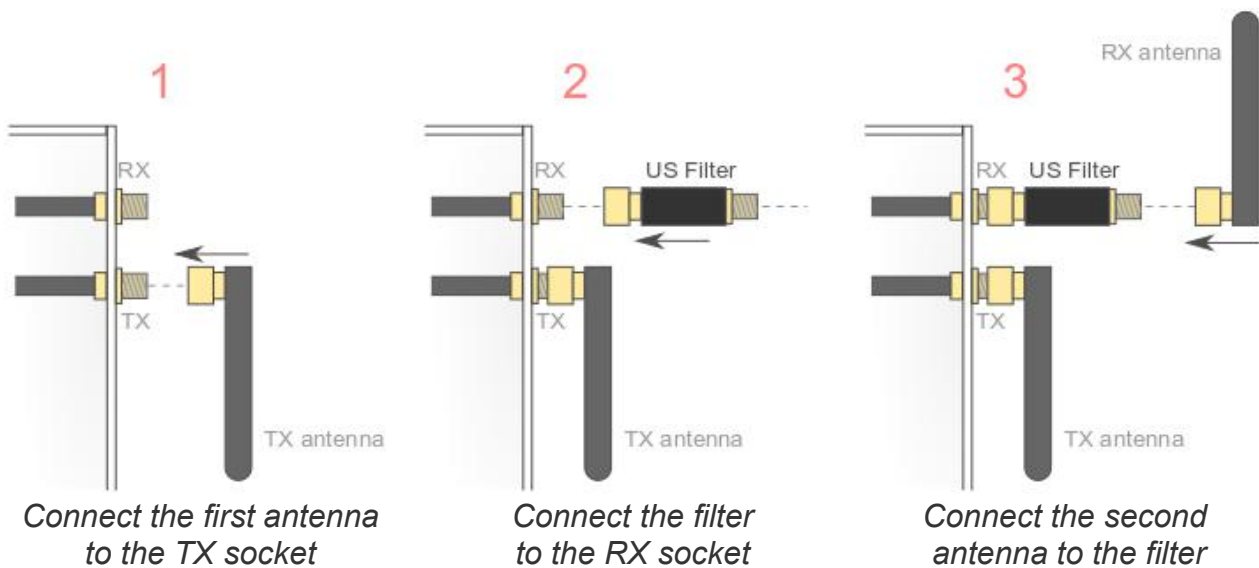
For the video guide regarding the LabKit setup, access this link:
<https://youtu.be/XkIRrzBoaVY>



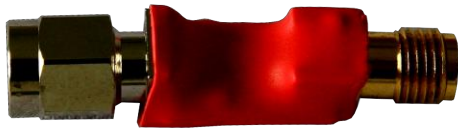
A. Assembling your LabKit

1. Connect one antenna to the TX socket.
2. Connect the filter to the RX socket. Then, connect the other antenna to the filter.

Note: Use the European filter, in red, if you are in the Americas. Use the American filter, in black, if you are in the rest of the world. This is mandatory to avoid local interference.¹



¹ By **the Americas** we are referring to the following regions: North America, South and Central America. The GSM operating bands for the American region are typically 850 MHz and 1,900 MHz. By **the rest of the world** we are referring to the following regions: Europe, Middle East, Asia, Africa and Australia. The GSM operating bands for these regions are 900 MHz and 1800 MHz.



European filter

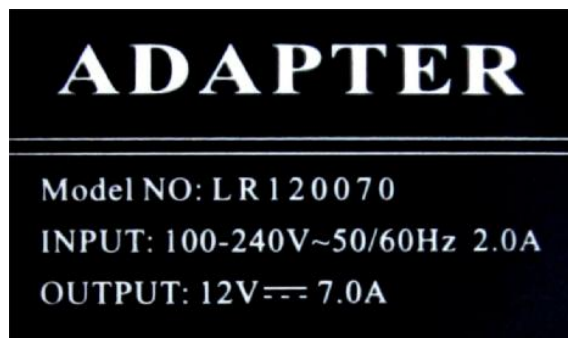


American filter

Filter	Color	Use
900MHz	Red	For use in the Americas (ITU Region 2)
850MHz	Black	For use in the rest of the world (ITU Regions 1 and 3)

Note: Screw the antennas as tight as possible. Always angle the antennas at a 90° orientation.

3. Connect the LabKit to the power supply with a cable via the +12VDC socket.
Keep in mind that the adapter's label should also indicate the power output.



Adaptor label

Optional: steps 4 and 5

4. Connect the Wi-Fi antenna to the two sockets.
 5. Connect the Smart Card Reader to a USB port.

To start writing SIM cards insert one of the empty SIMs into the reader with the metal contact facing up. To learn more about writing SIMs and adding subscribers, go to http://wiki.yatebts.com/index.php/YateBTS_Lab_Kit_Quick_Start_Guide#Add_a_subscriber_from_the_Lab_Kit

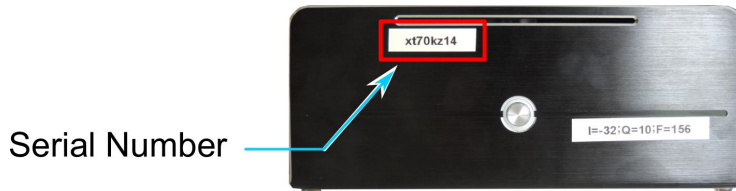


Smart Card Reader

B. Accessing your LabKit

1. Locally

- Connect the LabKit to the monitor via the HDMI or DVI video outputs; connect the keyboard and mouse to any of the USB sockets or to the dedicated mouse/keyboard PS2 port.
- As soon as you have powered the LabKit you will be asked for a password. The password is the serial number found on the front of your LabKit:



You can also find your LabKit's serial number by opening the LXTerminal console on the taskbar of your desktop, on the first line: `[yatebts@ybts-'serial number'~]$`.

- Access the YateBTS WebGUI locally by clicking on the YateBTS Config icon on the desktop:



This allows you to access the GUI, via HTTP, on two different ports.

1.1. If the machine is not in a secure network, it should be made accessible only from localhost by uncommenting the content of the `.htaccess`:

- <http://127.0.0.1/nib>
- <http://127.0.0.1:2080/nib>, with the '2080' port for newer YateBTS versions

1.2. You may also connect to the WebGUI using the following links:

- http://server_ip/nib
- http://server_ip:2080/nib, with the '2080' port for newer YateBTS versions

2. Remotely

Note: Use the **2080** port to access the web server installed on the LabKit.

2.1. DHCP through the Intel Ethernet port

- Connect the LabKit to your Wi-Fi router or switch with an Ethernet cable, in the Intel Ethernet port, as seen in the image showing LabKit's rear side.
- To find out your assigned IP address, enter the Mageia Control Center, go to Network & Internet, open the Network Center and select Wired (Ethernet) and click on Configure.
- Open your computer's browser and go to: <http://assigned-IP-address:2080/nib/main.php> to access the YateBTS WebGUI.

2.2. DHCP through the Intel Wi-Fi antenna

- Connect the Wi-Fi antenna to your LabKit.
- To find out the IP address you have been assigned, enter the Mageia Control Center, go to Network & Internet, open the Network Center and look for the Wireless (Wi-Fi) connection.
- Click on your SSID and select the Configure option to find out your assigned IP address.
- Open your computer's browser and go to: <http://assigned-IP-address:2080/nib/main.php> to access the YateBTS WebGUI.

2.3. Through a fixed IP address

- Connect the LabKit to your laptop or personal computer via the **Atheros** Ethernet port. (See image on page 2.)
- Go to your computer's Network Configuration and manually set up your network to the 10.0.3.2 fixed IP address.
- Open your browser and go to: <http://10.0.3.1:2080/nib/main.php> to access the YateBTS WebGUI.

2.4. Through a SSH port connection

- Open a console if you are a Linux user or download the Putty free software and use it, if you are a Windows user.
- Type in the following command

```
ssh yatebts@network-ip-assigned-ip -p 54321
```

- You will use the **54321** SSH port to access the YateBTS console.

You will be **asked for credentials** before entering the WebGUI interface. You must insert the information in lowercase.

```
username: yatebts  
password: 'the serial number on your LabKit'
```

Note: To connect to internet, click this icon in the Task Bar:



C. Configuring your LabKit

If you are operating your LabKit in the Americas, skip the next step, as your machine is already set up to function in these areas.

1. When you enter the Local Management Interface (LMI), you are first required to select the appropriate working mode. Click the **Modify** button to choose **GSM nib**.



Local Management Interface

Working Mode | Subscribers | BTS Configuration | Call Logs | ENB Configuration | Outbound

Note!! It is required to choose a working mode before doing any other configuration.

Status	Mode	Description
disabled	GSM nib	GSM Network in a box
disabled	GSM roaming	GSM BTS connected to YateUCN/HostedCore for voice/sms services
disabled	GSM dataroam	GSM BTS connected to YateUCN/HostedCore for voice/sms/data services
disabled	LTE enb	LTE EnodeB connected to a MME/HostedCore

Modify

2. Select the **GSM nib** working mode and click the **Save** button.



Local Management Interface

Working Mode | Subscribers | BTS Configuration | Outbound | Call Logs | ENB Configuration

Enabled	Mode	Description
<input checked="" type="radio"/>	GSM nib	GSM Network in a box
<input type="radio"/>	GSM roaming	GSM BTS connected to YateUCN/HostedCore for voice/sms services
<input type="radio"/>	GSM dataroam	GSM BTS connected to YateUCN/HostedCore for voice/sms/data services
<input type="radio"/>	LTE enb	LTE EnodeB connected to a MME/HostedCore

Save

3. Click the **BTS Configuration** tab. In the **GSM** section, enter the GSM radio interface tab and select the GSM operating band in the Radio.Band field, depending on the region where you operate the LabKit.

If you are in Europe, Middle East, Asia, Africa or Australia, change the operating band to 850 MHz (the typical operating band for America), to avoid local interference. (For more information go back to step A.2)

4. Insert an ARFCN value corresponding to the operating band you have selected, in the Radio.C0 field.



Local Management Interface

Working Mode Subscribers **BTS Configuration** Outbound Call Logs ENB Configuration

Radio **Core** Advanced >>

GSM GPRS

Set parameters values for section [gsm].	
Radio.Band	GSM850 ?
Radio.C0	#132 : 870 MHz downlink . ?
Identity.MCC	001 ?
Identity.MNC	05 ?
Identity.LAC	1000 ?
Identity.CI	11 ?
Identity.BSIC.BCC	2 ?
Identity.BSIC.NCC	0 ?
Identity.ShortName	YateBTS ?
Radio.PowerManager.MaxAttenDB	10 ?
Radio.PowerManager.MinAttenDB	0 ?

Submit Reset

D. Making your first call

1. Turn on the phones. They should now register to the **00150** test network if all the steps above have been correctly performed. If the network hasn't been selected automatically, select the **00150** network manually.

At this point you should receive the following automatic SMS: "Your allocated phone no. is Thank you for installing YateBTS. Call David at david(32843).", to find out the phone number allocated to the SIM card and to confirm that the phone has connected to the network.

2. Dial **302** from the phone marked with the number **301** or viceversa to test the network connection.

Alternatively,

3. Call the number **32843**. When you call the number, a "Welcome" IVR function will play a prompt and offer three options:

- press 1 to start EchoTest;
- press 2 to be sent to conference;
- press 3 to make an outbound call to David.

Bonus

You can have SMS conversations with the **Eliza** chat robot by sending text messages to the number **35492**.

You have now successfully configured your LabKit™.

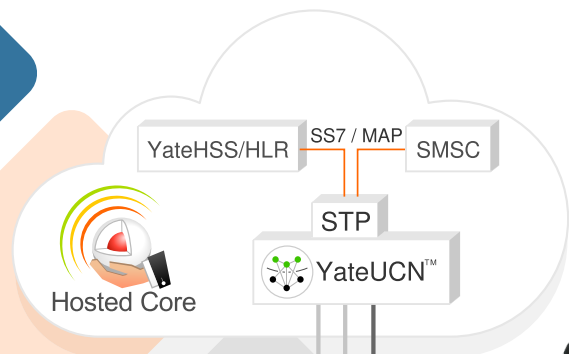
For more information please check the YateBTS Wiki at <http://wiki.yatebts.com> with an emphasis on the Network in a Box and LabKit section at: http://wiki.yatebts.com/index.php/Network_in_a_Box.

Tell us about your experience using the LabKit:

- send an email to the following address: office@ss7ware.com

or

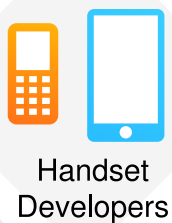
- start a conversation on our forum: <http://forum.yate.ro/>



Free register to
Hosted Core for
more features



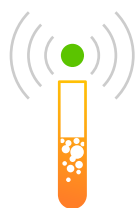
Scan here



Handset
Developers



M2M application development



Mobile network
operator labs



Research and
Education



Security
research