

## **CT714c LANforge-Attenuator with 4 Attenuator Channels: 50 MHz** **- 8 GHz**

The CT714c RF Attenuator is used to attenuate (decrease) the RF signal between wireless devices. The two SMA ports for a given channel are on opposite sides of the attenuator. This is helpful when mounting the attenuator on the side of RF Chamber stacks. A summary of the technical specifications is below:

Max RF Power:	+28 dBm
Impedance:	50 $\Omega$
Frequency Range:	50 MHz – 8.0 GHz
Attenuation Range:	0 – 95 dB
Attenuation Steps:	0.25 dB increments

The CT714c may be controlled through software access over the USB-Serial port or Ethernet. The included LANforge software suite supports automated scripting as well as manual configuration of the attenuator modules.

The CT714c should be used with an RF enclosure to prevent the devices connected to the attenuator from bypassing the RF attenuator using over-the-air RF leakage.

The CT714c has no moving parts and will fit into a small travel bag or briefcase for easy portability.

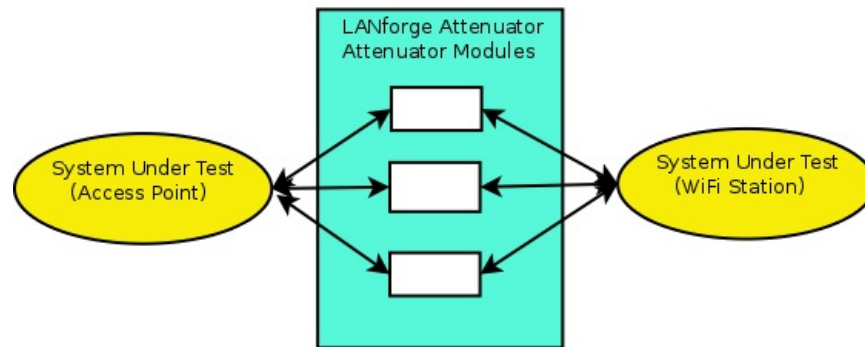
The CT714c includes a USB Cable for both management and power supply. If powering many attenuators, a powered USB hub should be used. PoE Ethernet is also supported.

NOTE: This product may have a different hardware configuration than the system pictured above.  
Refer to your official quote for details.

---

Candela Technologies Inc., 2417 Main Street, Suite 201, P.O. Box 3285, Ferndale, WA 98248, USA  
www.candelatech.com | sales@candelatech.com | +1 360 380 1618

## **Example Network Diagram**



The LANforge attenuator sits between two RF systems, often a WiFi AP on one side and WiFi Station on the other. The attenuator and WiFi stations are connected by shielded SMA-Male cables. Adjust the attenuation as desired either with the LANforge GUI or direct access over serial.

---

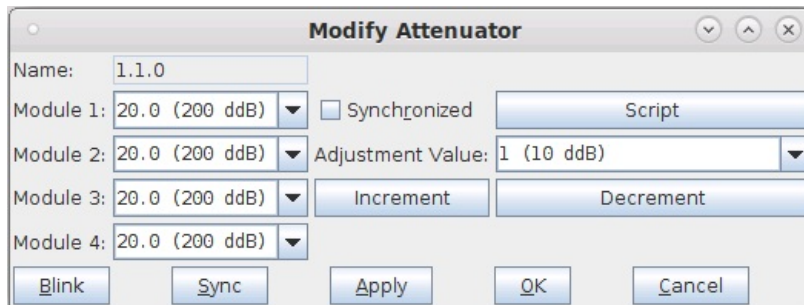
Candela Technologies Inc., 2417 Main Street, Suite 201, P.O. Box 3285, Ferndale, WA 98248, USA  
www.candelatech.com | sales@candelatech.com | +1 360 380 1618

## Quick Start Guide

1. Connect the CT714c to a Linux system running LANforge with the included USB cable. The USB cable allows control of the CT714c. The USB cable also provides power so no other power cable is required. PoE Ethernet connectivity may also be used.
2. Connect the attenuator pairs: One side to one system and the other side to another system or antennas.
3. Open a LANforge GUI and connect to the Linux system with the CT714c.
4. If using USB, the attenuator should be automatically discovered. If using Ethernet, then click the Discover button. In the Attenuator tab, you should see the CT714c device appear. Modify it to set attenuation values manually and/or configure a script to change attenuations automatically.
5. One useful feature for the CT714c is the Rate vs Range test in Chamber View. The second screenshot below shows the possible options this feature gives. For more information, please see [Testing Rate vs Range throughput for a WiFi Device](#).

## LANforge-Attenuator Related Images

### LANforge Attenuator Configuration Screen



The screenshot shows a 'Modify Attenuator' dialog box with the following fields and controls:

- Name:** 1.1.0
- Module 1:** 20.0 (200 ddB) with a dropdown arrow.
- Module 2:** 20.0 (200 ddB) with a dropdown arrow.
- Module 3:** 20.0 (200 ddB) with a dropdown arrow.
- Module 4:** 20.0 (200 ddB) with a dropdown arrow.
- Synchronized:** An unchecked checkbox.
- Adjustment Value:** 1 (10 ddB) with a dropdown arrow.
- Buttons:** Script, Increment, Decrement, Blink, Sync, Apply, OK, and Cancel.

### LANforge Attenuator Rate vs Range Test

Rate vs Range Test

Settings

Advanced Configuration

Report Configuration

Selected DUT:

netgear-r7800

Duration:

15 sec (15 s)

Downstream Port:

1.1.21 sta0

Upstream Port:

<Custom>

Path Loss:

10

Rate:

85%

Channels

Mode

Packet Size

AUTO

802.11a

78

No-Change

802.11b

142

1

802.11g

256

2

802.11abg

512

3

802.11abgn

1024

4

802.11bgn

MTU

5

802.11bg

4000

6

9000

Spatial Streams

Security

Bandwidth

AUTO

AUTO

AUTO

1

Open

20

2

WEP

40

3

WPA

80

4

WPA2

160

5

WPA3

Traffic Type

Attenuator:

UDP

1.1.0

TCP

0..+50..950

Direction

DUT Transmit

DUT Receive

Start

Another Iteration

Pause

Cancel

Candela Technologies Inc., 2417 Main Street, Suite 201, P.O. Box 3285, Ferndale, WA 98248, USA  
 www.candelatech.com | sales@candelatech.com | +1 360 380 1618

## Software Features

1. Using Rate vs Range, an AP can be tested how well it can transmit packets at different signal levels for transit and receive.
2. Emulate mesh node distance.
3. Test device roaming between APs.
4. Test how well the AP can receive packets with different MCS at different RF Signal levels.

## Hardware Specification

## Additional Products

For a more complete WiFi testing setup, you may wish to consider the [CT711 RF Noise generator](#), [CT712 RADAR Simulator](#), [CT523](#) and [CT525](#) series WiFi traffic generators.

Candela Technologies Inc., 2417 Main Street, Suite 201, P.O. Box 3285, Ferndale, WA 98248, USA  
 www.candelatech.com | sales@candelatech.com | +1 360 380 1618

