

# MEASUREMENT SUPPORT SYSTEMS

The ISS11 is designed to be a flexible platform on which we offer different types of support functionality to the RTS systems.

## ISS11 Instrument Switch



The ISS11 Instrument Switch makes it possible for the user to create a permanent test set-up around the RTS. All the instruments like network analyzers and communication testers can be connected to the chamber without time consuming re-cabling. ISS11 Instrument Switch contains three high performance SP4T switches and two optional SPDT switches for support of RTS with 4x4 MIMO. The switch is controlled via Ethernet and is fully integrated in the Bluetest Flow platform.

## ISS11 Attenuator System



The ISS11 Attenuator System enables for IP throughput versus attenuation performance measurements on both access points and stations. With its four 90 dB step attenuators it can support measurements on devices with up to 4x4 MIMO in any frequency between 700 MHz and 6 GHz. The ISS11 Attenuator System is fully integrated in the Bluetest Flow platform. Any base station, access point or device with connectorized antenna ports can be used as a reference source for the throughput measurements making the system future proof.

## ORDERING INFORMATION

<b>Test Device Holders</b>	
Universal Antenna/Mobile Holder	152
Small Table for Laptop or Head Phantom	AH301
Low Loss Mobile Holder	154
Low Loss Tablet PC Holder	155
<b>Reference Antennas</b>	
Reference Antenna 650 MHz – 3.5 GHz	AD111
Reference Antenna 2.0 GHz – 6.0 GHz	AD112
Reference Antenna 400 MHz – 2.0 GHz	AD113
Reference Antenna 5 GHz - 50 GHz	AD116
<b>Miscellaneous Accessories</b>	
Laptop Phantom	160
RTS65 Absorber Kit	AD101
RTS25 Absorber Kit	AD281
RTS85/95 Absorber Kit	161
WLAN Amplifier	AM302
<b>Measurement Support Systems</b>	
ISS11 Attenuator System	164
ISS11 Instrument Switch 2x2 MIMO	AM101
ISS11 Instrument Switch 4x4 MIMO	AM102
CSU1 Combiner Splitter Unit ( 4 x 4->1)	AM201
CSU2 Combiner Splitter Unit (4 x 2->1)	AM202

## CONTACT US

[www.bluetest.se](http://www.bluetest.se)  
@ sales@bluetest.se  
+46 (0)31 7786161  
Bluetest AB  
Lindholmsallén 10  
SE- 417 55 Gothenburg  
Sweden

# PRODUCT SHEET

BLUETEST.se

WWW.BLUETEST.SE

# ACCESSORIES FOR THE REVERBERATION TEST SYSTEM



## SUPPORTING YOUR REVERBERATION TEST SYSTEM

Bluetest offers a wide range of accessories designed to support and simplify the Reverberation Test System (RTS) measurements. These are the details that make a difference.

DEVICE HOLDERS

Bluetest offers multiple test device holders. Each holder is carefully designed to offer maximum performance and ease of use.

Small Table for Laptops or Head Phantoms



The small table (W 270 mm x D 210 mm x H 255 mm) is suitable for laptop measurements as well as for measurements with phantom heads and/or phantom hands. The table comes with mounting holes for the attachment of the most common phantom heads and phantom hands.

Low Loss Mobile Holder



The Low Loss Mobile Holder is made of a special material with very low loss tangent (<0.0002) and a dielectric constant close to air (1.075). These properties minimize the measurement impact of the holder. The holder also makes it very easy to move the phone or other small wireless devices in and out of the chamber and place the device in a repeatable position. Cable outlets are provided in strategic positions.

Low Loss Tablet PC Holder



The Low Loss Tablet PC Holder is a larger version of the Low Loss Mobile Holder, suitable for the rapidly growing segment of “surfpads”. It is suitable for devices with the longest side up to 265 mm, corresponding to approximately 10” screen size (max 1 kg). The tablet PC can be positioned both horizontally and vertically and the holder is equipped with cable outlets in strategic positions.

Universal Antenna/Mobile Holder



The Universal Antenna/ Mobile holder is a flexible general purpose holder allowing antennas or mobile phones of different size and shape to be positioned in various angles and positions.

ANTENNAS

A range of various reference antennas supports the path loss/chamber loss reference measurement of the various Bluetest chambers.

Available Reference Antennas



- 400 MHz – 2.0 GHz
- 650 MHz – 3.5 GHz
- 2.0 GHz – 6.0 GHz
- 5 GHz – 50 GHz
- 6 GHz - 67 GHz

MISCELLANEOUS ACCESSORIES

Phantoms, absorbers for tuning of delay spread or extra cables. You can even get the smaller details from us.

Coaxial Cables and Adapters



We have all the coaxial cables and adapters you need to set up connections between your RTS, ISS11, CSU and other third party measurement instruments. They are of high quality and available in different lengths.

Laptop Phantom



The Laptop Ground Plane Phantom is used for measurements on USB devices. It is designed according to the specification in 3GPP TS 34.114 and comes with a 1 m USB cable and two clamps for easy and flexible attachment to the Small Table.

Combiner/Splitter Units



Even with 16 available measurement ports on the RTS there may be configurations where the measurement ports simply are not enough. The Combiner/Splitter units are the solution to this problem and come in two versions. CSU1 contains 4 pcs of 4-to-1 combiner/splitters and CSU2 contains 4 pcs of 2-to-1 combiner/splitters. Both units are 19” rack mountable and 3HU high.

2-8 GHz WLAN Amplifier



WLAN measurements sometimes need a power boost. This amplifier improves the link budget for measurements in our larger chambers and with higher modulation order. It contains two downlink amplifiers and one uplink amplifier.

RF Absorber Kits



For some measurements it may be necessary to tune the delay spread of the chamber. An easy and convenient way to tune the delay spread is to use the RTS65 RF Absorber Kit consisting of blocks of RF absorbing material with magnetic backside for easy mounting and removal when not in use. It comes in two sizes allowing for accurate delay spread adjustment. The RTS65 chamber has clearly marked fixed absorber locations to reduce measurement uncertainty and to easier repeat measurements. There are also dedicated absorber kits available for the RTS25 and the larger RTS85 and RTS95.