Installation Guide

Products: Bridge Links
Version: 1.0
Date: September 2004

artem GmbH
Olgastr. 152
D-89073 Ulm, Germany
phone +49-731-1516-0
fax +49-731-1516-390
info@artem.de
www.artem.de

Content 2

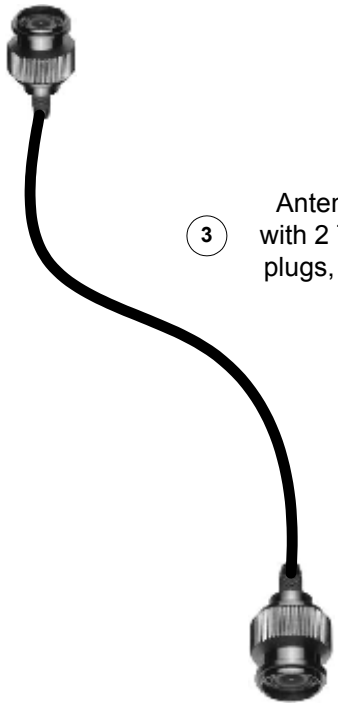
artem GmbH
Olgastr. 152
D-89073 Ulm, Germany
phone +49-731-1516-0
fax +49-731-1516-390
info@artem.de
www.artem.de

Bridge Link
500100 BL11-700

The Bridge Link BL11-700 contains all devices needed to build up a reliable wireless link.
Sites may be linked at true 11 Mbps (transmit rate) at distances up to 700m.
In order to fulfill the regulatory requirements and to ensure the operational reliability, only Artem specified components may be used.
These combinition of devices is approved to be used with the artem ComPoint in the EU and EFTA according to R&TTE directive 1999/5/EG.

1 Patch antenna 8.5 dBi with TNC jack

2 Mounting kit for antenna



3 Antenna cable with 2 TNC cable plugs, 7m length

Adapter RTNC-TNC 4

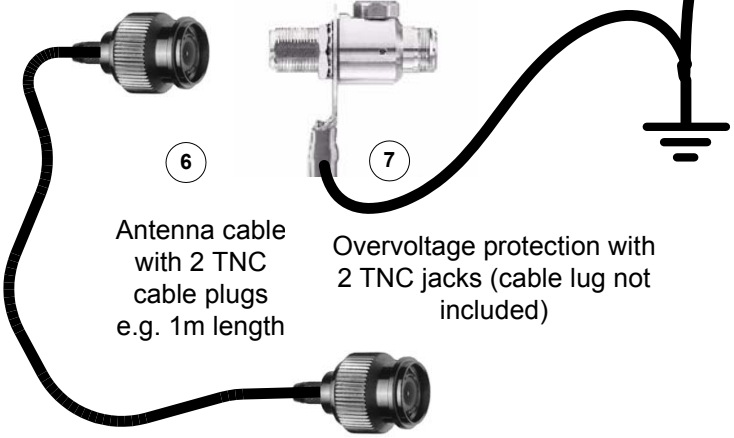
CPE-BR1-b 5

Antenna mast

Accessories, not included in kit

Adapter with 2 TNC jacks 8

6 7



Antenna cable with 2 TNC cable plugs e.g. 1m length

Overvoltage protection with 2 TNC jacks (cable lug not included)

The bundle consists of 2 parts of each:

Pos.	Order Nr.	Name	
1	600250	ANT-TNC.B-D-085-03	(Antenna)
2	600298	ACC-MNT-KIT	(for Antenna)
3	600248	CAB-AC-2TNC.KS-213-7m	(7m bundle)
4	600406	CAB-AC-RTNC.S-TNC.b	(Adapter)
5	500109	CPE-BR1-b	(ComPoint Enterprise)

Accessories, not included in Bundle:

7	600279	ACC-EMP-2TNC.B-G	(Overvoltage protection)
8	600165	CAB-AC-2TNC.B	(Adapter)

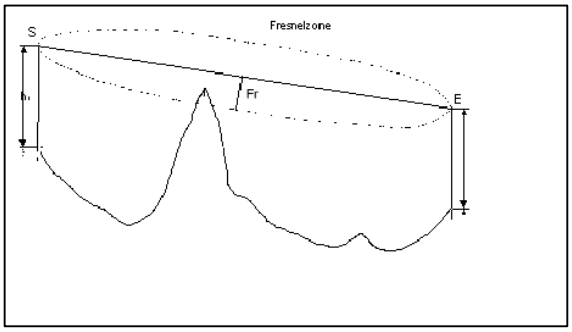
Optional extensions, not included in Bundle:
Please note: To connect two cables you need either an overvoltage protection or an adapter. Extending the cables results in decreasing range.
Find some sample ranges for cable extensions on both sites at the table:

Nr:	Order Nr:	Name	Length:	Range.
6	600219	CAB-AC-2TNC.KS-213-1m	1m	630m
or	600221	CAB-AC-2TNC.KS-213-3m	3m	510m
or	600228	CAB-AC-2TNC.KS-213-10m	10m	250m

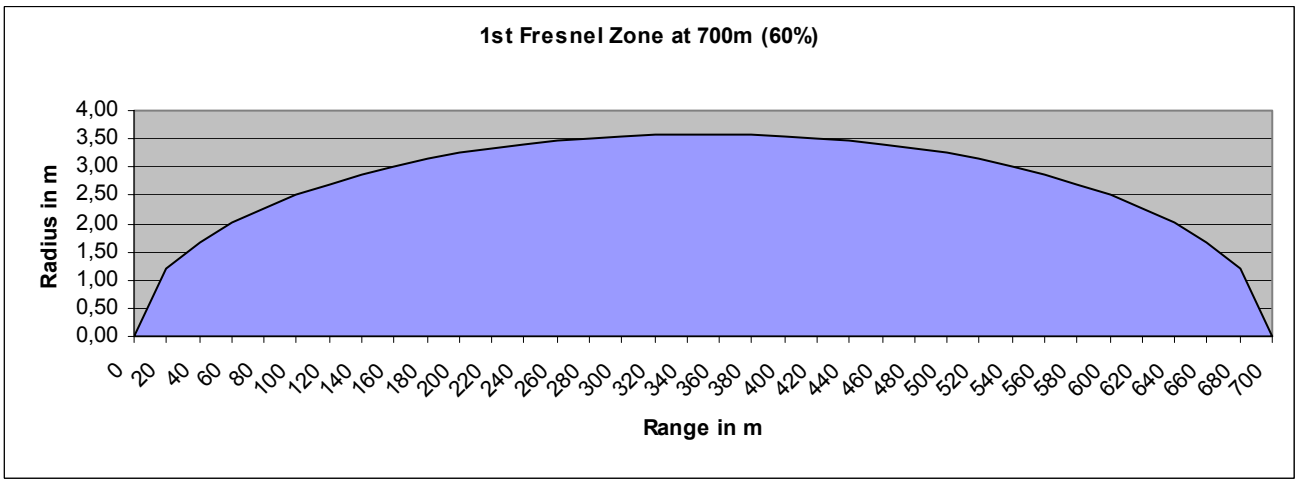
Installation hints for Bridge Link BL11-700

Before building a bridge link you must be sure to have line of sight between both antennas. This means, that there must not be any trees or other obstacles in the first fresnel zone.

If you plan a bridge link of e.g. 700m length, it must be ensured that in the middle of the link, after 350m, at least 3.6m free space are given to the next obstacle. If neccessary the mast must be placed at a higher position.

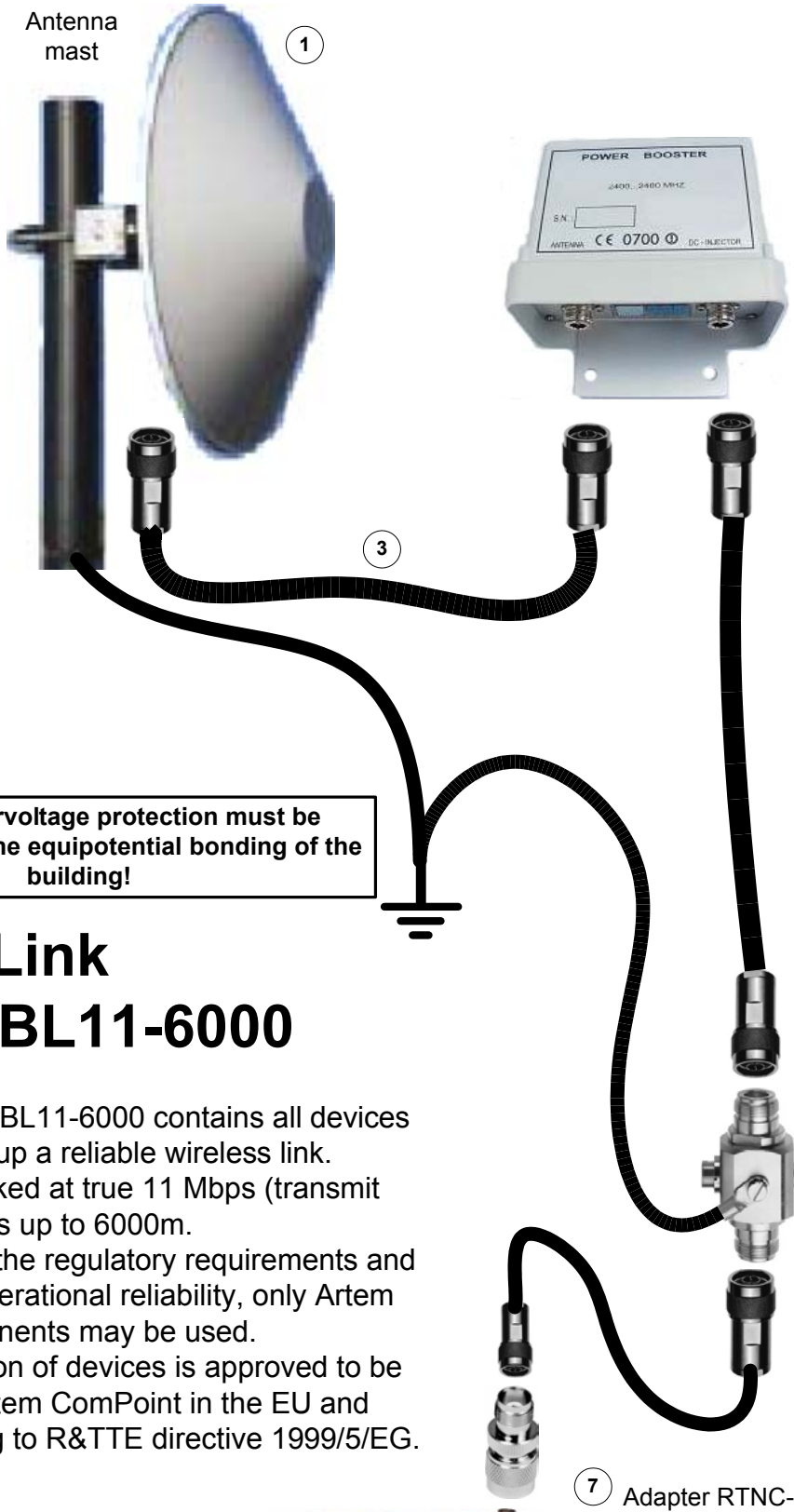


Fresnel zone:
Fresnel zones are able to quantify the influence of obstacles to the radiowave propagation. With DSSS systems at least 60% of the first fresnel zone must be free.



Installation:
Mount the ComPoint Enterprise at a sheltered position inside of the building. Mount the antenna at the desired position and connect ComPoint and antenna to the antenna cable.

Important when mounting at a mast: Our BL11-700 bridge links do not include overvoltage protection, because they are often mounted at sheltered locations like at windows. If you plan to mount the antenna at a mast, you must use an overvoltage protection to protect your ComPoint and LAN in case of lightning strokes. We offer these protectors and cables as accessories.
Connect the mast and the overvoltage protection with the equipotential bonding of the building. (lightning conductor). Please make sure that you use a cable with sufficient diameter (6-16qmm).



1 Antenna with N jack

2 Receive amplifier

3 Antenna cable with 2 N cable plugs, 1m length

4 Antenna cable with 2 N cable plugs, 20m length

5 Overvoltage protection with 2 N jack

6 Adapter cable with N plug to TNC plug, 30cm length

7 Adapter RTNC-TNC

8 ComPoint Enterprise

Mast and overvoltage protection must be connected with the equipotential bonding of the building!

Bridge Link
500101 BL11-6000

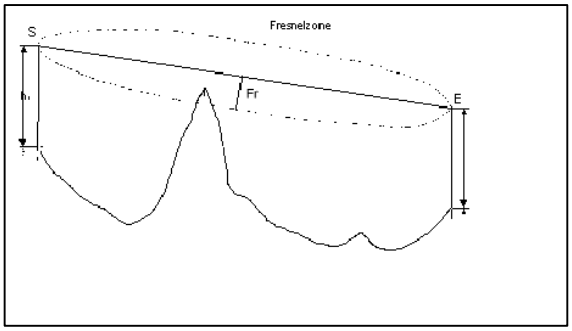
The Bridge Link BL11-6000 contains all devices needed to build up a reliable wireless link.
Sites may be linked at true 11 Mbps (transmit rate) at distances up to 6000m.
In order to fulfill the regulatory requirements and to ensure the operational reliability, only Artem specified components may be used.
These combinition of devices is approved to be used with the artem ComPoint in the EU and EFTA according to R&TTE directive 1999/5/EG.

Installation hints for Bridge Link BL11-6000

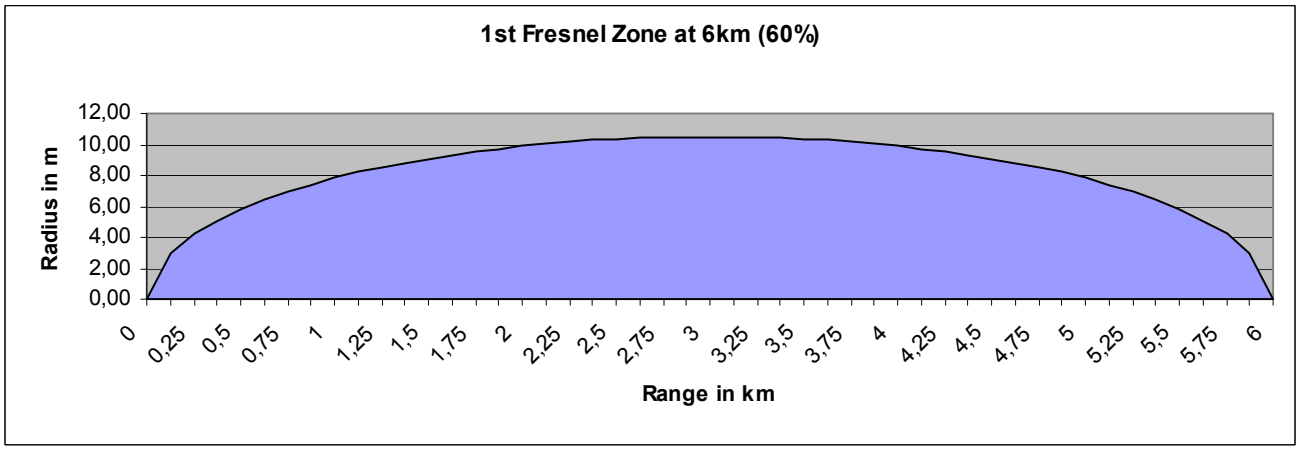
Before building a bridge link you must be sure to have line of sight between both antennas. This means, that there must not be any trees or other obstacles in the first fresnel zone.

You can see the size of the fresnel zone for the distances of 6km in the diagrams below.

If you plan a bridge link of e.g. 6km length, it must be ensured that in the middle of the link, after 3km, at least 11m free space are given to the next obstacle. If neccessary the mast must be placed at a higher position.

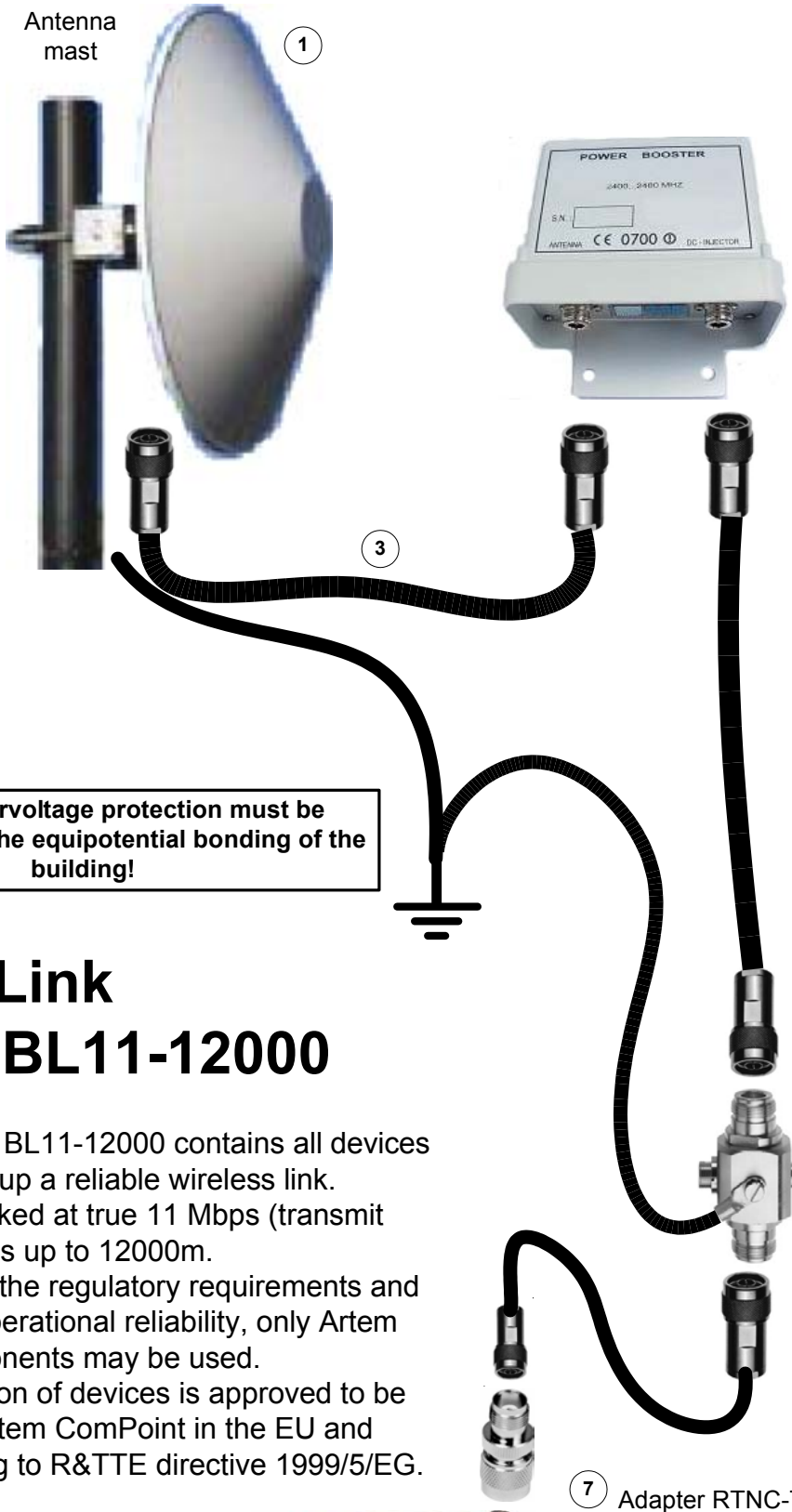


Fresnel zone:
Fresnel zones are able to quantify the influence of obstacles to the radiowave propagation. With DSSS systems at least 60% of the first fresnel zone must be free.



Installation:
Mount the ComPoint Enterprise at a sheltered position in the building and connect the short adapter cable between ComPoint and the overvoltage protection and connect this to the antenna cable. Mount the antenna and amplifier module to the mast and interconnect both with the 1m cable. Connect the amplifier with the overvoltage protection by using the 20m cable.
Important: Connect the mast and the overvoltage protection with the equipotential bonding of the building. (lightning conductor). Please make sure that you use a cable with sufficient diameter (6-16qmm).
If you want to install the ComPoint in a distance to the overvoltage protection, you must use an extension cable. In this case you might have lower ranges, because every cable has a certain loss.
The overvoltage protection must not be changed to a $\lambda/4$-type, because in this case it will cause a short circuit.

Do not power up the System until everything is ready installed to prevent short circuits.



1 Antenna with N jack

2 Receive amplifier

3 Antenna cable with 2 N cable plugs, 1m length

4 Antenna cable with 2 N cable plugs, 20m length

Mast and overvoltage protection must be connected with the equipotential bonding of the building!

Bridge Link
500102 BL11-12000

The Bridge Link BL11-12000 contains all devices needed to build up a reliable wireless link.
Sites may be linked at true 11 Mbps (transmit rate) at distances up to 12000m.
In order to fulfill the regulatory requirements and to ensure the operational reliability, only Artem specified components may be used.
These combinition of devices is approved to be used with the artem ComPoint in the EU and EFTA according to R&TTE directive 1999/5/EG.

5 Overvoltage protection with 2 N jack

6 Adapter cable with N plug to TNC plug, 30cm length

7 Adapter RTNC-TNC

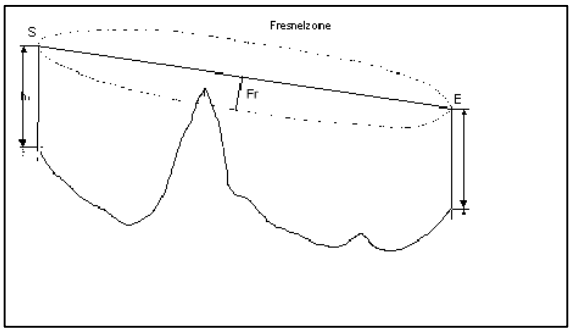
8 ComPoint Enterprise

Installation hints for Bridge Link BL11-12000

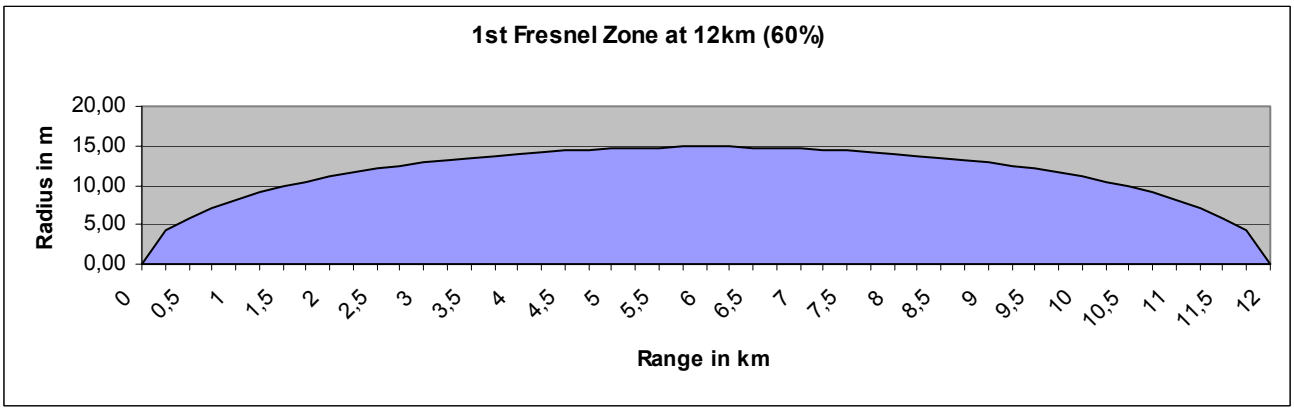
Before building a bridge link you must be sure to have line of sight between both antennas. This means, that there must not be any trees or other obstacles in the first fresnel zone.

You can see the size of the fresnel zone for the distances of 12km in the diagrams below.

If you plan a bridge link of e.g. 12km length, it must be ensured that in the middle of the link, after 6km, at least 15m free space are given to the next obstacle. If neccessary the mast must be placed at a higher position.



Fresnel zone:
Fresnel zones are able to quantify the influence of obstacles to the radiowave propagation. With DSSS systems at least 60% of the first fresnel zone must be free.



Installation:
Mount the ComPoint Enterprise at a sheltered position in the building and connect the short adapter cable between ComPoint and the overvoltage protection and connect this to the antenna cable. Mount the antenna and amplifier module to the mast and interconnect both with the 1m cable. Connect the amplifier with the overvoltage protection by using the 20m cable.
Important: Connect the mast and the overvoltage protection with the equipotential bonding of the building. (lightning conductor). Please make sure that you use a cable with sufficient diameter (6-16qmm).
If you want to install the ComPoint in a distance to the overvoltage protection, you must use an extension cable. In this case you might have lower ranges, because every cable has a certain loss.
The overvoltage protection must not be changed to a $\lambda/4$-type, because in this case it will cause a short circuit.

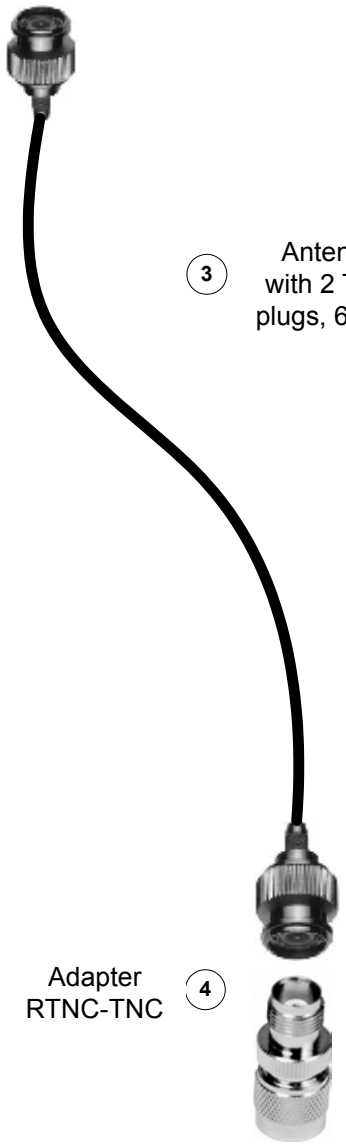
Do not power up the System until everything is ready installed to prevent short circuits.

Bridge Link
500113 BL54g-50

The Bridge Link BL54g-50 contains all devices needed to build up a reliable wireless link.
Sites may be linked at true 54 Mbps (transmit rate) at distances up to 50m.
In order to fulfill the regulatory requirements and to ensure the operational reliability, only Artem specified components may be used.
These combinition of devices is approved to be used with the artem ComPoint in the EU and EFTA according to R&TTE directive 1999/5/EG.

1 Patch antenna 8,5dBi with TNC jack

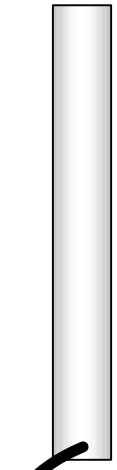
2 Mounting kit for antenna



3 Antenna cable with 2 TNC cable plugs, 6.5m lenght

Adapter RTNC-TNC 4

CPE-BR1-b 5



Antenna mast

Accessories, not included in kit

Adapter with 2 TNC jacks 8

6 7

Antenna cable with 2 TNC cable plugs e.g. 1m length

Overvoltage protection with 2 TNC jacks (cable lug not included)

The bundle consists of to 2 parts of each:

Pos.	Order Nr.	Name
1	600250	ANT-TNC.B-D-085-03
2	600298	ACC-MNT-KIT
3	600387	CAB-AC-2TNC.KS-58-6,5m
4	600406	CAB-AC-RTNC.S-TNC-B
5	500116	CPE-BR1-g

Accessories, not included in Bundle:

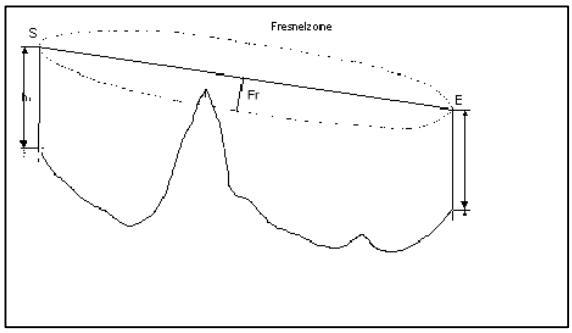
7	600279	ACC-EMP-2TNC.B-G	(Overvoltage protection)
8	600165	CAB-AC-2TNC.B	(Adapter)

Optional extensions, not included in Bundle:
Please note: To connect two cables you need either an overvoltage protection or an adapter. Extending the cables results in decreasing range ot transfer rate

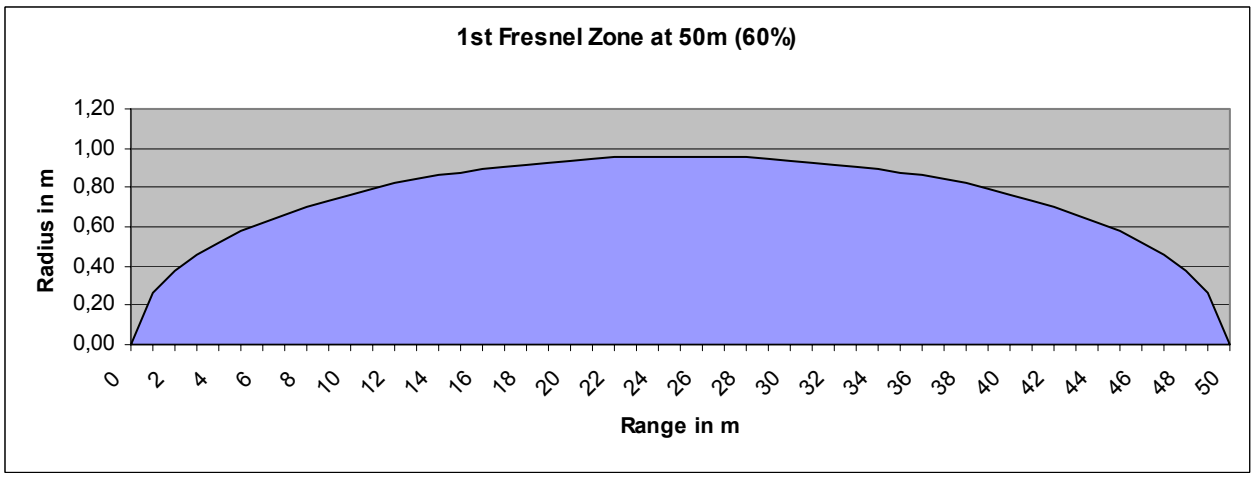
Installation hints for Bridge Link BL54g-50

Before building a bridge link you must be sure to have line of sight between both antennas. This means, that there must not be any trees or other obstacles in the first fresnel zone.

If you plan a bridge link of e.g. 50m length, it must be ensured that in the middle of the link, after 25m, at least 1m free space are given to the next obstacle. If neccessary the mast must be placed at a higher position.



Fresnel zone:
Fresnel zones are able to quantify the influence of obstacles to the radiowave propagation. With DSSS systems at least 60% of the first fresnel zone must be free.

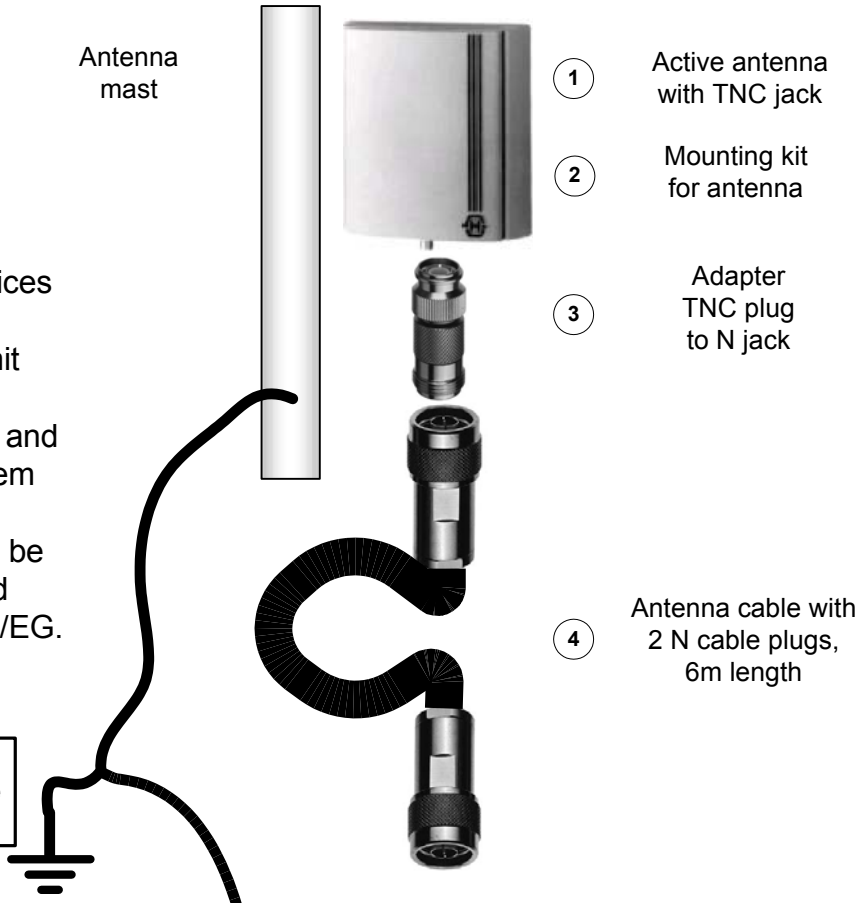


Installation:
Mount the ComPoint Enterprise at a sheltered position in the building. Mount the antenna at the desired position and connect ComPoint and antenna to the antenna cable.

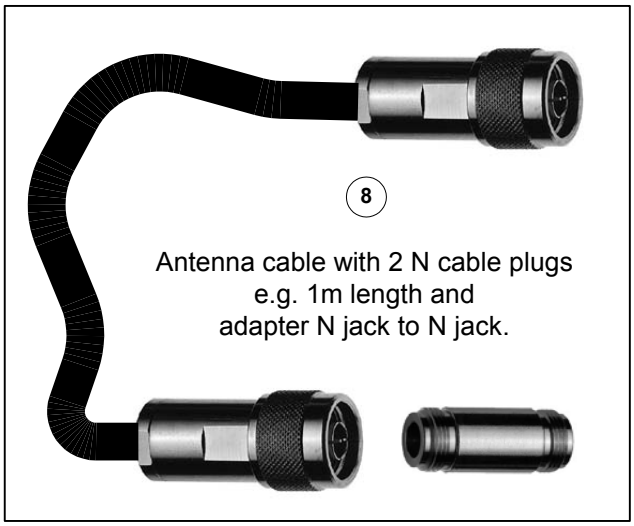
Important when mounting at a mast: Our 50m antenna bundles do not include an overvoltage protection, because they are often mounted at sheltered locations like at windows. If you plan to mount the antenna at a mast, you must use an overvoltage protection to protect your ComPoint and LAN in case of lightning strokes. We offer these protectors and cables as accessories.
Connect the mast and the overvoltage protection with the equipotential bonding of the building. (lightning conductor). Please make sure that you use a cable with sufficient diameter (6-16qmm).

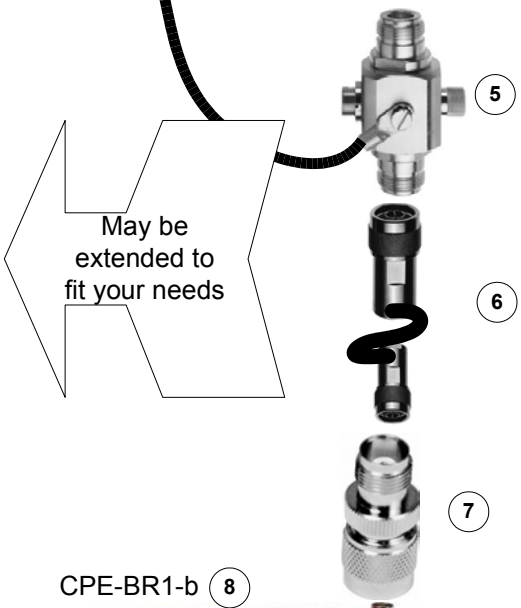
Bridge Link
500114 BL54g-400

The Bridge Link BL54g-400 contains all devices needed to build up a reliable wireless link.
Sites may be linked at true 54 Mbps (transmit rate) at distances up to 400m.
In order to fulfill the regulatory requirements and to ensure the operational reliability, only Artem specified components may be used.
These combinition of devices is approved to be used with the artem ComPoint in the EU and EFTA according to R&TTE directive 1999/5/EG.



Mast and overvoltage protection must be connected with the equipotential bonding of the building!





CPE-BR1-b (8)

The bundle consits of 2 parts of each:

Nr:	Order Nr:	Name
1	600282	ANT-TNC.B-D-TX060-RX300
2	600298	ACC-MNT-KIT
3	600289	CAB-AC-TNC.S-N.B
4	600351	CAB-AC-2N.S-213-6m
5	600287	ACC-EMP-2N.B-G
6	600346	CAB-AC-TNC.KS-N-KS-58-30cm
7	600406	CAB-AC-RTNC.S-TNC.B
8	500117	CPE-BR1-g-ActAnt

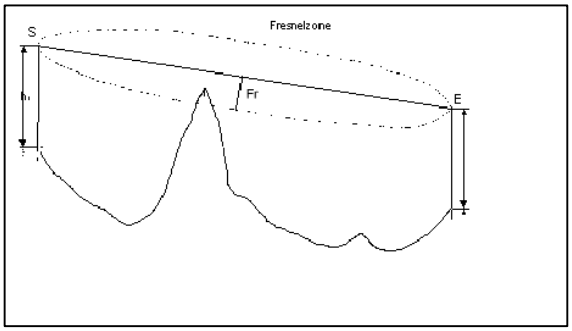
Optional extensions, not included in bundle.
Please note:To connect two cables you need either an overvoltage protection or an adapter. Extending the cables results in decreasing range or transfer rate.

Installation hints for Bridge Link BL54g-400

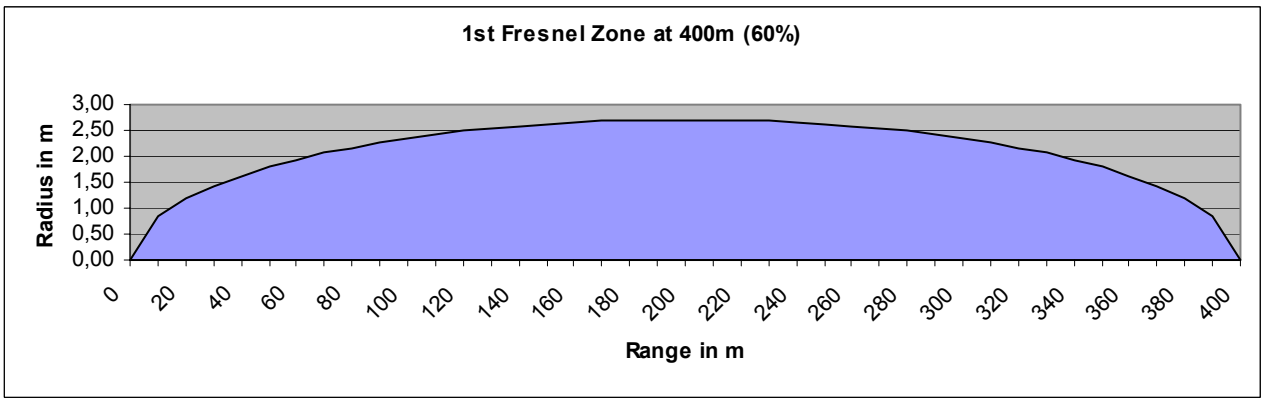
Before building a bridge link you must be sure to have line of sight between both antennas. This means, that there must not be any trees or other obstacles in the first fresnel zone.

You can see the size of the fresnel zone for distances of 400m in the diagram below.

If you plan a bridge link of e.g. 400m length, it must be ensured that in the middle of the link, after 200m, at least 2.7m free space are given to the next obstacle. If neccessary the mast must be placed at a higher position.

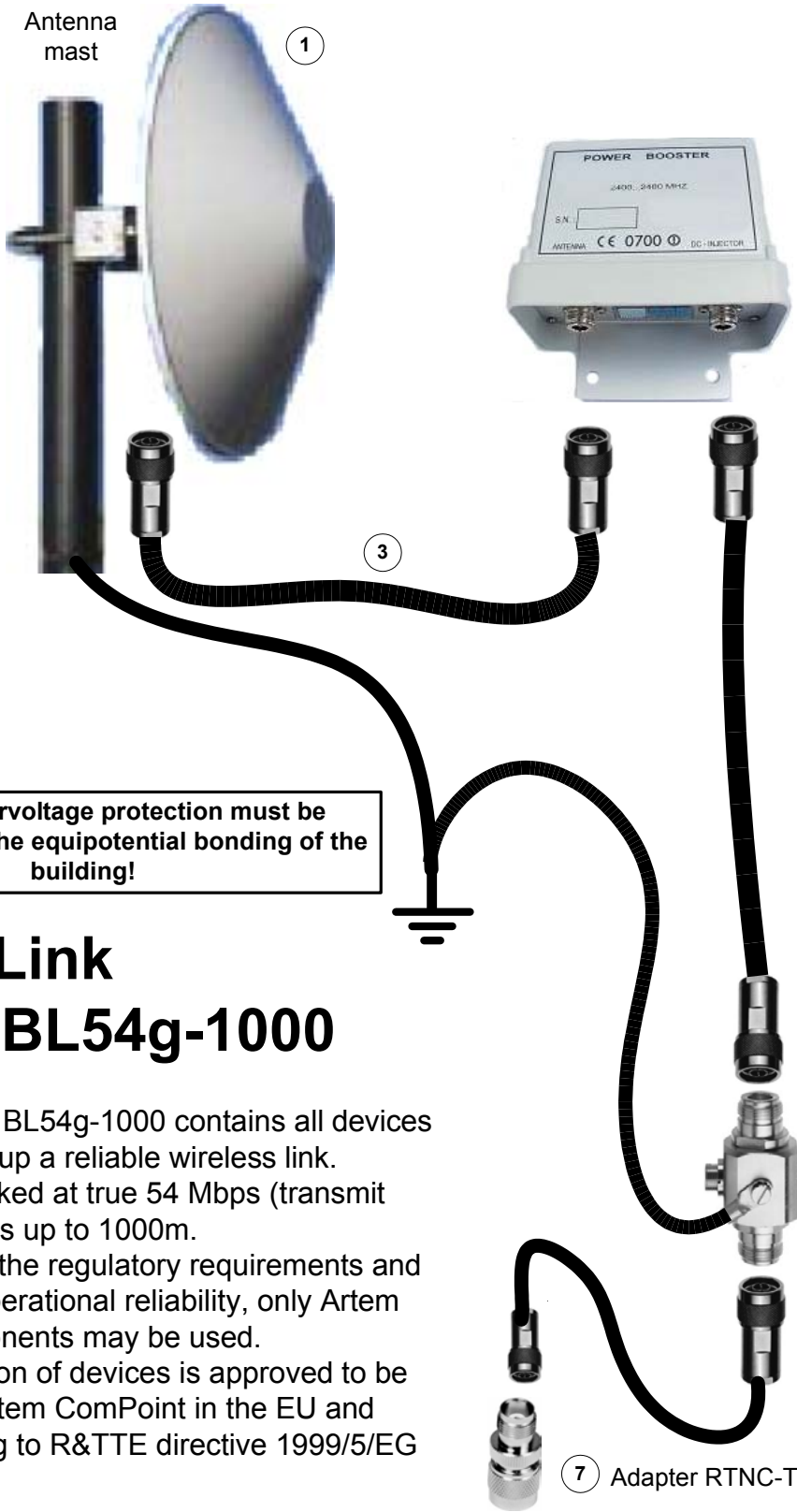


Fresnel zone:
Fresnel zones are able to quantify the influence of obstacles to the radiowave propagation. With DSSS systems at least 60% of the first fresnel zone must be free.



Installation:
Mount the ComPoint Enterprise at a sheltered position in the building and connect the overvoltage protection and the antenna cable. Mount the antenna with the mounting bracket at the mast and connect it to the cable.
Important: Connect the mast and the overvoltage protection with the equipotential bonding of the building. (lightning conductor). Please make sure that you use a cable with sufficient diameter (6-16qmm).
If you want to install the ComPoint in a distance to the overvoltage protection, you must use an extension cable. In this case you might have lower ranges, because every cable has a certain loss.
The overvoltage protection must not be changed to a $\lambda/4$-type, because in this case it will cause a short circuit.

Do not power up the System until everything is ready installed to prevent short circuits.



1 Antenna with N jack

2 Receive amplifier

3 Antenna cable with 2 N cable plugs, 1m length

4 Antenna cable with 2 N cable plugs, 20m length

5 Overvoltage protection with 2 N jack

6 Adapter cable with N plug to TNC plug, 30cm length

7 Adapter RTNC-TNC

8 ComPoint Enterprise

Mast and overvoltage protection must be connected with the equipotential bonding of the building!

Bridge Link
500115 BL54g-1000

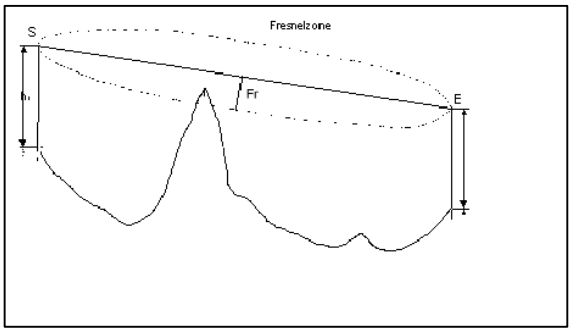
The Bridge Link BL54g-1000 contains all devices needed to build up a reliable wireless link.
Sites may be linked at true 54 Mbps (transmit rate) at distances up to 1000m.
In order to fulfill the regulatory requirements and to ensure the operational reliability, only Artem specified components may be used.
These combinition of devices is approved to be used with the artem ComPoint in the EU and EFTA according to R&TTE directive 1999/5/EG

Installation hints for Bridge Link BL54g-1000

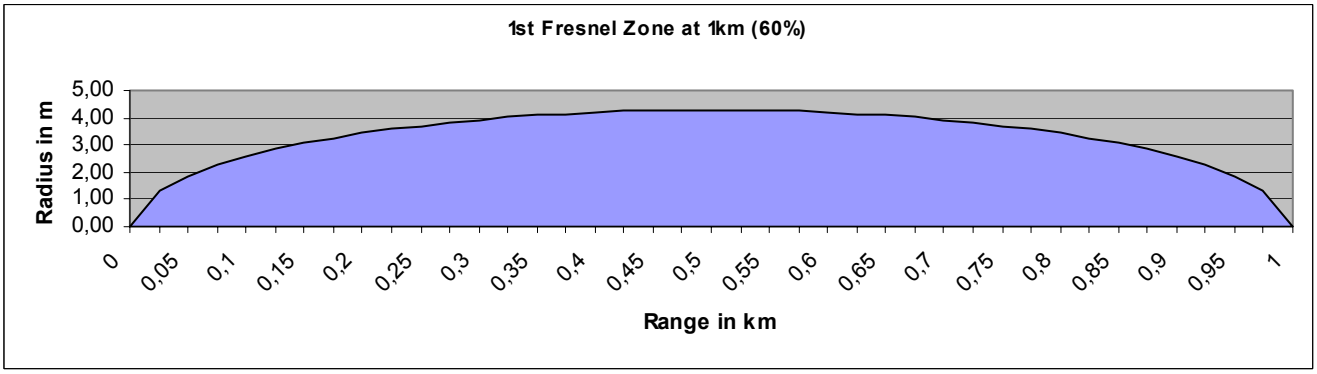
Before building a bridge link you must be sure to have line of sight between both antennas. This means, that there must not be any trees or other obstacles in the first fresnel zone.

You can see the size of the fresnel zone for the distances of 1km in the diagrams below.

If you plan a bridge link of e.g. 1km length, it must be ensured that in the middle of the link, after 0.5km, at least 4.3m free space are given to the next obstacle. If neccessary the mast must be placed at a higher position.



Fresnel zone:
Fresnel zones are able to quantify the influence of obstacles to the radiowave propagation. With DSSS systems at least 60% of the first fresnel zone must be free.



Installation:
Mount the ComPoint Enterprise at a sheltered position in the building and connect the short adapter cable between ComPoint and the overvoltage protection and connect this to the antenna cable. Mount the antenna and amplifier module to the mast and interconnect both with the 1m cable. Connect the amplifier with the overvoltage protection by using the 20m cable.
Important: Connect the mast and the overvoltage protection with the equipotential bonding of the building. (lightning conductor). Please make sure that you use a cable with sufficient diameter (6-16qmm).
If you want to install the ComPoint in a distance to the overvoltage protection, you must use an extension cable. In this case you might have lower ranges, because every cable has a certain loss.
The overvoltage protection must not be changed to a $\lambda/4$-type, because in this case it will cause a short circuit.

Do not power up the System until everything is ready installed to prevent short circuits.