



**Standing wave ratio measuring bridge**  
**SWR 2700**  
**Manual**  
**Product passport**

**1. Purpose**

1.1. The measuring bridge of the standing wave ratio (SWR Bridge) is a passive device designed to measure the reflection coefficient of radio frequency circuits and elements. As a source of the RF signal, a tracking generator of the spectrum analyzer is used, from which the signal is fed to the device under test via the SWR bridge.

Depending on the reflection coefficient of the device under test, a part of the signal is reflected to the SWR bridge and then sent to the receiver (at the measuring input of the device), where it is processed and displayed.

1.2. The measuring bridge allows to measure the standing wave ratio and the quality of matching the load with feed line. The device is based on a Wheatstone bridge with matching elements.

1.3. When purchasing a measuring bridge, check its completeness.

**Attention! After the purchase of the device claims for incompleteness will not be accepted!**

**2. Delivery set**

Measuring bridge SWR 2700	1 pcs.
SMA(male) - SMA(male) straight adapter	2 pcs.
Manual	1 pcs.
Packaging	1 pcs.

**3. Technical parameters**

Name of parameter	Values	
Frequency range	1-2700 MHz	
VSWR (50 Ohm) ports	< 1,5*	
Directivity	1 MHz to 2200 MHz	> 25 dB
	TO RF IN   TEST port=Short – TO RF IN   TEST port=Load**	2200 MHz to 2700 MHz
Coupling (TEST port – TO RF IN)	-10 dB	
Insertion loss (TO TG OUT-TEST port)	1 MHz to 1600 MHz	< 6 dB
	1600 MHz to 2400 MHz	< 9 dB
	2400 MHz to 2700 MHz	< 15 dB
Operating temperature range	0 ... +40 °C	
Overall dimensions (D×W×H)	without SMA ports	80×40×28 mm
	with SMA ports	80×60×28 mm
Weight	0,1 kg	

\*- VSWR of the coupled port is not regulated;

\*\*- here and below are the device port notation is shown.

**Due to the constant improvement of the design and technical characteristics, the manufacturer reserves the right to make changes in the design and completeness of this product.**

**4. Device connection and measurement**

4.1. The measuring bridge is designed to work in conjunction with the Arinst SSA TG R2 spectrum analyzer, but it is also possible to work with instruments from other manufacturers.

4.2. To connect the device to the Arinst SSA-TG R2 spectrum analyzer, use the direct SMA - SMA adapters supplied. To connect to other spectrum analyzers of the Arinst series with a tracking generator, use angle adapters (see section 4.7.), purchased separately.

4.3. When using a measuring bridge with devices from other manufacturers, connect the device using cables and adapters suitable for measuring instrument connectors. The length of the cables should be minimal to eliminate the



**Standing wave ratio measuring bridge**  
**SWR 2700**  
**Manual**  
**Product passport**

**1. Purpose**

1.1. The measuring bridge of the standing wave ratio (SWR Bridge) is a passive device designed to measure the reflection coefficient of radio frequency circuits and elements. As a source of the RF signal, a tracking generator of the spectrum analyzer is used, from which the signal is fed to the device under test via the SWR bridge.

Depending on the reflection coefficient of the device under test, a part of the signal is reflected to the SWR bridge and then sent to the receiver (at the measuring input of the device), where it is processed and displayed.

1.2. The measuring bridge allows to measure the standing wave ratio and the quality of matching the load with feed line. The device is based on a Wheatstone bridge with matching elements.

1.3. When purchasing a measuring bridge, check its completeness.

**Attention! After the purchase of the device claims for incompleteness will not be accepted!**

**2. Delivery set**

Measuring bridge SWR 2700	1 pcs.
SMA(male) - SMA(male) straight adapter	2 pcs.
Manual	1 pcs.
Packaging	1 pcs.

**3. Technical parameters**

Name of parameter	Values	
Frequency range	1-2700 MHz	
VSWR (50 Ohm) ports	< 1,5*	
Directivity	1 MHz to 2200 MHz	> 25 dB
	TO RF IN   TEST port=Short – TO RF IN   TEST port=Load**	2200 MHz to 2700 MHz
Coupling (TEST port – TO RF IN)	-10 dB	
Insertion loss (TO TG OUT-TEST port)	1 MHz to 1600 MHz	< 6 dB
	1600 MHz to 2400 MHz	< 9 dB
	2400 MHz to 2700 MHz	< 15 dB
Operating temperature range	0 ... +40 °C	
Overall dimensions (D×W×H)	without SMA ports	80×40×28 mm
	with SMA ports	80×60×28 mm
Weight	0,1 kg	

\*- VSWR of the coupled port is not regulated;

\*\*- here and below are the device port notation is shown.

**Due to the constant improvement of the design and technical characteristics, the manufacturer reserves the right to make changes in the design and completeness of this product.**

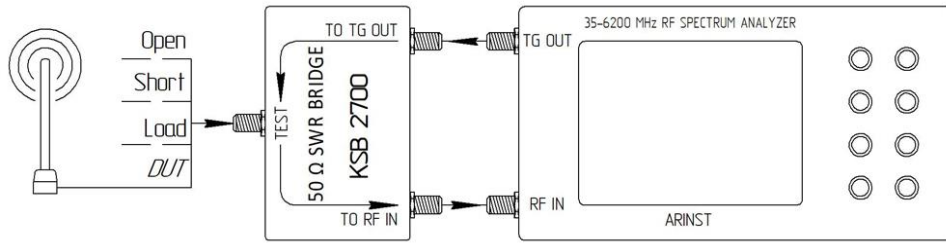
**4. Device connection and measurement**

4.1. The measuring bridge is designed to work in conjunction with the Arinst SSA TG R2 spectrum analyzer, but it is also possible to work with instruments from other manufacturers.

4.2. To connect the device to the Arinst SSA-TG R2 spectrum analyzer, use the direct SMA - SMA adapters supplied. To connect to other spectrum analyzers of the Arinst series with a tracking generator, use angle adapters (see section 4.7.), purchased separately.

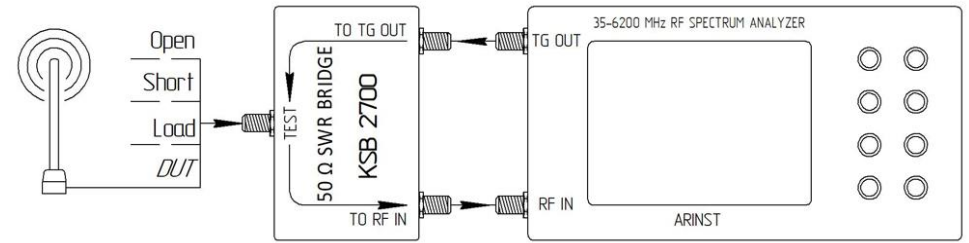
4.3. When using a measuring bridge with devices from other manufacturers, connect the device using cables and adapters suitable for measuring instrument connectors. The length of the cables should be minimal to eliminate the

systematic error introduced by the connecting cables.



Scheme 1 - Connecting the measuring bridge to the spectrum analyzer

systematic error introduced by the connecting cables.



Scheme 1 - Connecting the measuring bridge to the spectrum analyzer

Designations in scheme 1:

<b>TG OUT</b>	Signal generator output	<b>Open</b>	OPEN calibration standart
<b>RF IN</b>	Antenna input	<b>Short</b>	SHORT calibration standart
<b>TO TG OUT</b>	Measuring bridge input	<b>Load</b>	LOAD calibration standart
<b>TO RF IN</b>	Measuring bridge output	<b>DUT</b>	Device under test
<b>TEST</b>	Measuring port		

4.4. The process of calibration and measurement with the use of Arinst spectrum analyzers with a built-in tracking generator is described in detail in Operating Instructions Spectrum Analyzers Arinst.

4.5. Calibration and measurements when using measuring instruments from other manufacturers, follow the technical documentation of the manufacturer of the spectrum analyzer.

Attention! It is desirable to set the output power level of the signal generator as much as possible (for Arinst SSA-TG R2 - 15 dBm, for others no more than +10 dBm) to reduce noise level, but not leading to saturation of the measuring device.

4.6. When connecting the test load to the measuring port of the bridge, use connecting cables of minimum length, as the spectrum analyzer uses scalar calibration, eliminating the effect of amplitude attenuation in the connecting cable without taking into account phase shift.

Attention! Connect test devices to the bridge measurement port via flexible cables. Direct connection of the device under test to the measuring port may damage the connector and cause the measuring bridge to fail.

4.7. To connect the device to the spectrum analyzer Arinst SSA-TG and Arinst SSA-TG LC, you must additionally purchase:

- angle adapter SMA (male) - SMA (male) 2 PCs.
- angle adapter SMA (male) - SMA (female) 2 PCs.

4.8. The measuring bridge is intended for amateur radio use, as it is not a professional measurement tool.

### 5. Warranty

The manufacturer guarantees that the product meets the specifications specified in this document. The warranty period is 12 months from the date of purchase. During this period, the manufacturer provides free warranty service.

The warranty covers only defects caused by the manufacturer. Warranty service is provided by the manufacturer or authorized service centers.

The manufacturer shall not be liable for any direct or indirect damage related to the operation of the product. The warranty does not apply to the products operated in violation of the operating conditions, having mechanical damage, traces of opening the case, damage to the connectors.

The product is not subject to mandatory certification.

Date of sale \_\_\_\_\_ Seller \_\_\_\_\_  
(date) (store name or stamp)

I am familiar with the instruction and operating rules. \_\_\_\_\_  
(buyer's signature)

Designations in scheme 1:

<b>TG OUT</b>	Signal generator output	<b>Open</b>	OPEN calibration standart
<b>RF IN</b>	Antenna input	<b>Short</b>	SHORT calibration standart
<b>TO TG OUT</b>	Measuring bridge input	<b>Load</b>	LOAD calibration standart
<b>TO RF IN</b>	Measuring bridge output	<b>DUT</b>	Device under test
<b>TEST</b>	Measuring port		

4.4. The process of calibration and measurement with the use of Arinst spectrum analyzers with a built-in tracking generator is described in detail in Operating Instructions Spectrum Analyzers Arinst.

4.5. Calibration and measurements when using measuring instruments from other manufacturers, follow the technical documentation of the manufacturer of the spectrum analyzer.

Attention! It is desirable to set the output power level of the signal generator as much as possible (for Arinst SSA-TG R2 - 15 dBm, for others no more than +10 dBm) to reduce noise level, but not leading to saturation of the measuring device.

4.6. When connecting the test load to the measuring port of the bridge, use connecting cables of minimum length, as the spectrum analyzer uses scalar calibration, eliminating the effect of amplitude attenuation in the connecting cable without taking into account phase shift.

Attention! Connect test devices to the bridge measurement port via flexible cables. Direct connection of the device under test to the measuring port may damage the connector and cause the measuring bridge to fail.

4.7. To connect the device to the spectrum analyzer Arinst SSA-TG and Arinst SSA-TG LC, you must additionally purchase:

- angle adapter SMA (male) - SMA (male) 2 PCs.
- angle adapter SMA (male) - SMA (female) 2 PCs.

4.8. The measuring bridge is intended for amateur radio use, as it is not a professional measurement tool.

### 5. Warranty

The manufacturer guarantees that the product meets the specifications specified in this document. The warranty period is 12 months from the date of purchase. During this period, the manufacturer provides free warranty service.

The warranty covers only defects caused by the manufacturer. Warranty service is provided by the manufacturer or authorized service centers.

The manufacturer shall not be liable for any direct or indirect damage related to the operation of the product. The warranty does not apply to the products operated in violation of the operating conditions, having mechanical damage, traces of opening the case, damage to the connectors.

The product is not subject to mandatory certification.

Date of sale \_\_\_\_\_ Seller \_\_\_\_\_  
(date) (store name or stamp)

I am familiar with the instruction and operating rules. \_\_\_\_\_  
(buyer's signature)