Radioddity HF-009 User manual

Congratulations on purchasing our new multi-band HF antenna. You now have the perfect antenna for portable and temporary ham radio operation.

- The Radioddity HF-009 antenna is supplied in a special " Carrying bag " (#8). The 5 parts of the antenna are located in the lower part. The three " Ground radial wires " (#5) and the “Antenna coax-cable” (#6) are located in the upper zip compartment
- The Radioddity HF-009 antenna is ideal for POTA-operations as it is set up in less than 2 minutes. Properly adjusted it provides an excellent Rx and Tx solution for your HF radio.
- The Radioddity HF-009 antenna weights around 1 kg. The “Carrying bag” (#8) can be conveniently carried on your shoulder or in your hands.
- The Radioddity HF-009 antenna covers a full frequency range from as low as 60m (5 MHz) up to 6m (50 MHz).
- The Radioddity HF-009 antenna works as a 1/4 wavelength antenna. For bands below 17m (18MHZ) a “Tunable loading coil” (#3) is supplied and the “Telescopic whip” (#4) should be fully extended. Now adjust the inductance of the “Tunable loading coil” (#3) by moving the red cursor upwards (for higher frequencies) or downwards (for lower frequencies). A tip is to apply tape alongside the scale of the “Tunable loading coil” (#3) and to mark positions for each band’s resonant point.
- Frequencies above 17 meters (18MHZ) can not be tuned using the “Tunable loading coil” (#3). Either remove the “Tunable loading coil” (#3) or move the red cursor to the top most point. Now adjust the length of the “Telescopic whip“ (#4) to resonate the antenna at the required operating frequency. For the highest frequencies the “Telescopic whip“ (#4) will not be extended very far whereas for lower frequencies down to 18MHz more of the “Telescopic whip“ (#4) will need to be pulled out.
- The Radioddity HF-009 antenna comes with all you need, including 5m “Antenna coax-cable” (#6) with PL259 plugs on its ends and a “BNC-m to SO239 adapter” (#7) suitable for Xiegu radios.
- You can drive the Radioddity HF-009 antenna with a signal of up to 100W CW or 150W PEP SSB allowing its use with most transceivers or suitable HF amplifiers driven with a QRP radio.

***Attention**: The antenna is a metal conductor. Keep it far away from unsafe positions such as high-voltage power cables. Please use appropriate lightning protection if this device has to be operated during a thunderstorm to prevent harm to persons and equipment. We recommend, however, that you completely take down the antenna and do not use it in such weather conditions. The antenna is not suitable for permanent outdoor use and must be protected from adverse weather conditions (e.g. wind and rain).*

Specifications

Parameter	Value
Frequency range	5MHZ – 50 MHz
SWR when tuned	1.5:1
Impedance	50 Ohm
Maximum visible length	3.7m
Maximum power rating	CW: 100W, SSB: 150W PEP

Parameter	value
Ground radial length	About 5m (3 wires)
Antenna coax-cable length	5m
Total weight	2kg
Net weight	1.0kg
Size of carrying bag	48,5cm x 19,5cm x 9,5cm

All specifications subject to change without prior notice.

What´s in the box

#	qty	Description	Picture
1	1	**Ground spike with premounted antenna base** HF connector with SO-239 socket (Length 26cm, with M8 male thread)	
2	2	**Extension rod** (length 45cm, diameter 2cm, with M8 thread)	
3	1	**Tunable loading coil** (with built-in sliding adjustable inductance, length 44.5cm, with M8 thread)	
4	1	**Telescopic whip** (stainless steel, max length 2.30m, with M8 female thread)	
5	3	**Ground radial wire** (with 3mm banana plug on one end)	
6	1	**Antenna coax-cable** (Length 5m, with PL259 plug on both ends)	
7	1	**BNC-m to SO239 adapter**	

#	qty	Description	Picture
8	1	**Carrying bag** with handle and shoulder strap	
9	1	**User Manual**	

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- The Radioddity HF-009 antenna is ideal for POTA-operations as it is set up in less than 2 minutes. Properly adjusted it provides an excellent Rx and Tx solution for your HF radio.
- The Radioddity HF-009 antenna weighs around 1 kg. The "Carrying bag" (#8) can be conveniently carried on your shoulder or in your hands.
- The Radioddity HF-009 antenna covers a full frequency range from as low as 60m (5 MHz) up to 6m (50 MHz).
- The Radioddity HF-009 antenna works as a 1/4 wavelength antenna. For bands below 17m (18MHz) a "Tunable loading coil" (#3) is supplied and the "Telescopic whip" (#4) should be fully extended. Now adjust the inductance of the "Tunable loading coil" (#3) by moving the red cursor upwards (for higher frequencies) or downwards (for lower frequencies). A tip is to apply tape alongside the scale of the "Tunable loading coil" (#3) and to mark positions for each band's resonant point.
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- The Radioddity HF-009 antenna comes with all you need, including 5m "Antenna coax-cable" (#6) with PL259 plugs on its ends and a "BNC-m to SO239 adapter" (#7) suitable for Xiegu radios.
- You can drive the Radioddity HF-009 antenna with a signal of up to 100W CW or 150W PEP SSB allowing its use with most transceivers or suitable HF-amplifiers driven with a QRP radio.

Attention: *The antenna is a metal conductor. Keep it far away from unsafe positions such as high voltage power cables. Please use appropriate lightning protection if this device has to be operated during a thunderstorm to prevent harm to persons and equipment. We recommend, however, that you completely take down the antenna and do not use it in such weather conditions. The antenna is not suitable for permanent outdoor use and must be protected from adverse weather conditions (e.g. wind and rain).*

Specifications

Parameter	Value	Parameter	value
Frequency range	5MHZ – 50 MHz	Ground radial length	About 5m (5 wires)
SWR when tuned	1.5:1	Antenna coax-cable length	5m
Impedance	50 Ohm		
Maximum visible length	3.7m	Total weight	2kg
Maximum power rating	CW: 100W, SSB: 150W PEP	Net weight	1.0kg
		Size of carrying bag	48.5cm x 18.5cm x 9.5cm

All specifications subject to change without prior notice.

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***Notes**: Items included may change. All fittings are surface treated against corrosion and need to be well tightened to ensure reliable operation.*

Assembly instructions

Putting the Radioddity HF-009 together is completed in just a few minutes. This makes the Radioddity HF-009 ideal for portable-operation of your HF station.

1. Almost fully drive the “Ground spike with premounted antenna base” (#1) into the ground. The deeper, the better, but always leave the antenna base above the ground.

2. Mount both “Extension rods” (#2) on top of the “Tunable loading coil” (#2). (The extension rods extend the length of the “Telescopic whip” (#4) element).

3. Mount the “Tunable loading coil”” (#3) on top of the two “Extension rods” (#2). For frequencies above 18 MHz (17m) either skip this step or move the slider of the “Tunable loading coil”” (#3) to the very top.

4. Finally mount the “Telescopic whip” (#4) on top of the structure

5. Using the banana plugs connect the supplied three “Ground radial wires” (#5) to the three holes within the “Ground spike with premounted antenna base” (#2). The wires should be evenly distributed around the antenna base as much as possible in your portable situation.

6. This completes the initial construction of your Radioddity HF-009 antenna.

7. Now connect your antenna analyser (e.g., NanoVNA) to the antenna base, via a suitable length of 50 Ohm coax-cable, and adjust the antenna for the best SWR on the desired frequency.
   a. For frequencies below 18 MHz pull out the “Telescopic whip” (#4) to its maximum length and use the “Tunable loading coil” (#3) to tune for the best SWR.
   b. For frequencies above 18 MHz either remove the “Tunable loading coil” (#3) or move its slider to the very top. Adjust the length of the “Telescopic whip” (#4) to tune for the best SWR of the antenna at the required frequency.

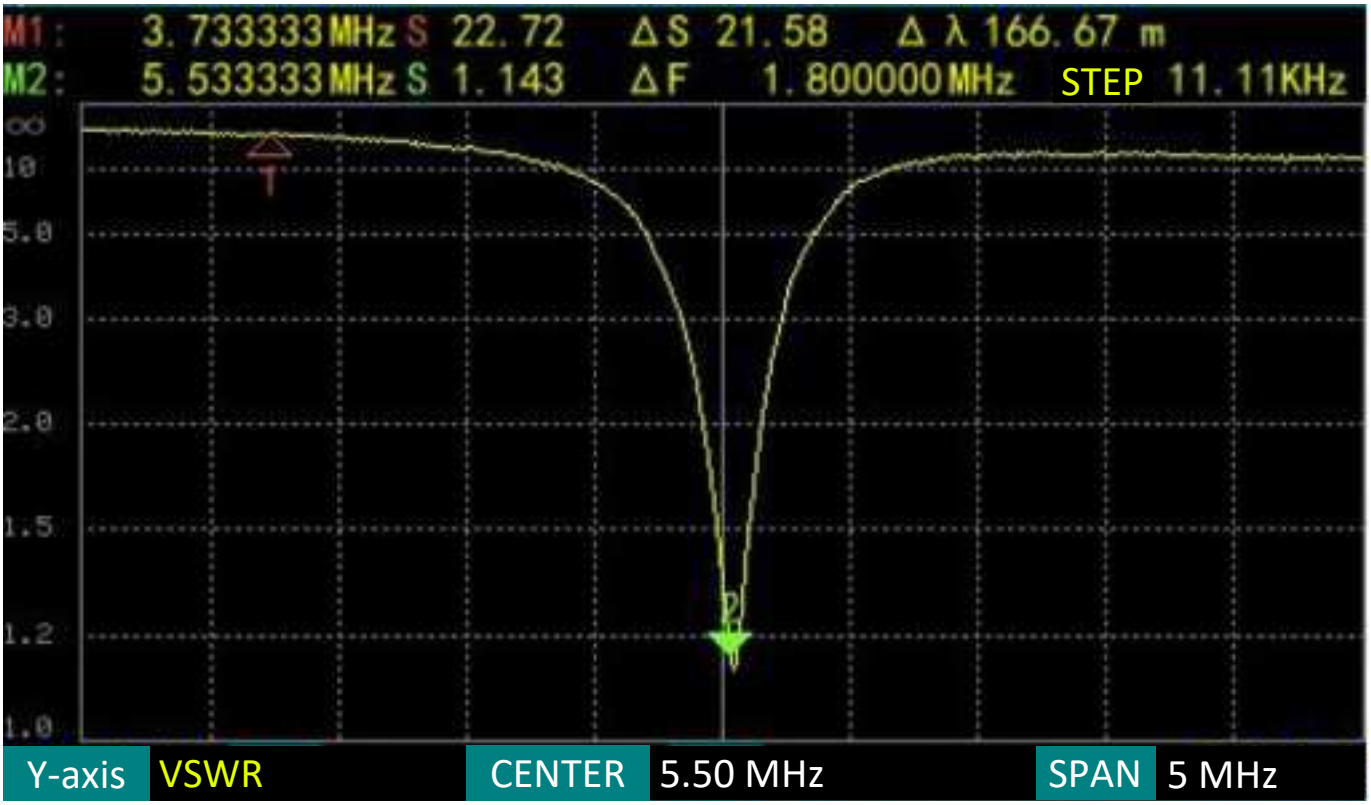
8. Finally connect the supplied “Antenna coax-cable” (#6) to the “Ground spike with premounted antenna base” (#1) and to your radio. Xiegu radios will require the supplied “BNC-m to SO239 adapter” (#7).

***Important**: The antenna is to be used with a sufficient ground plane structure acting as the antenna’s counterpoise. It is not intended to be mounted directly onto a radio.*

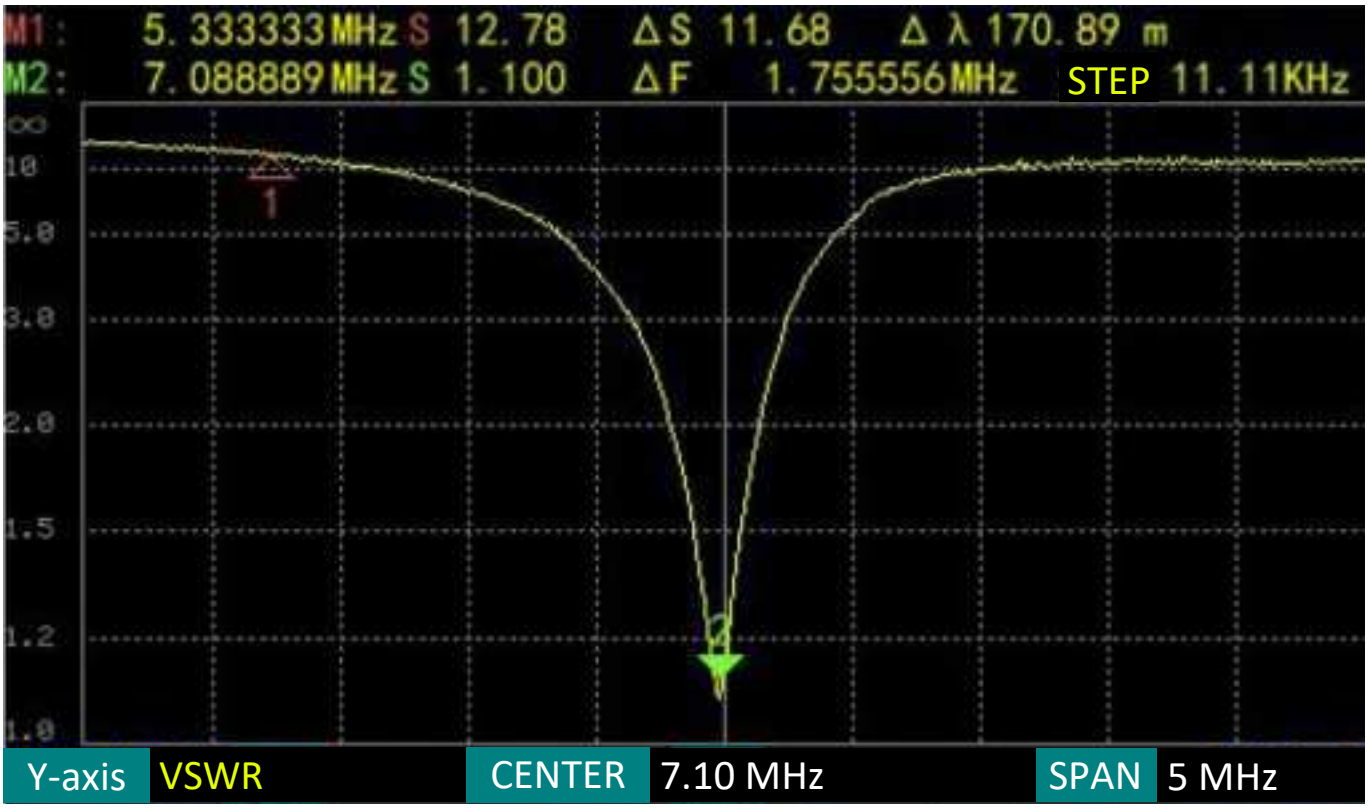
Make sure, that the Radioddity HF-009 is solidly assembled and is stable on the ground.

Sample SWR diagrams

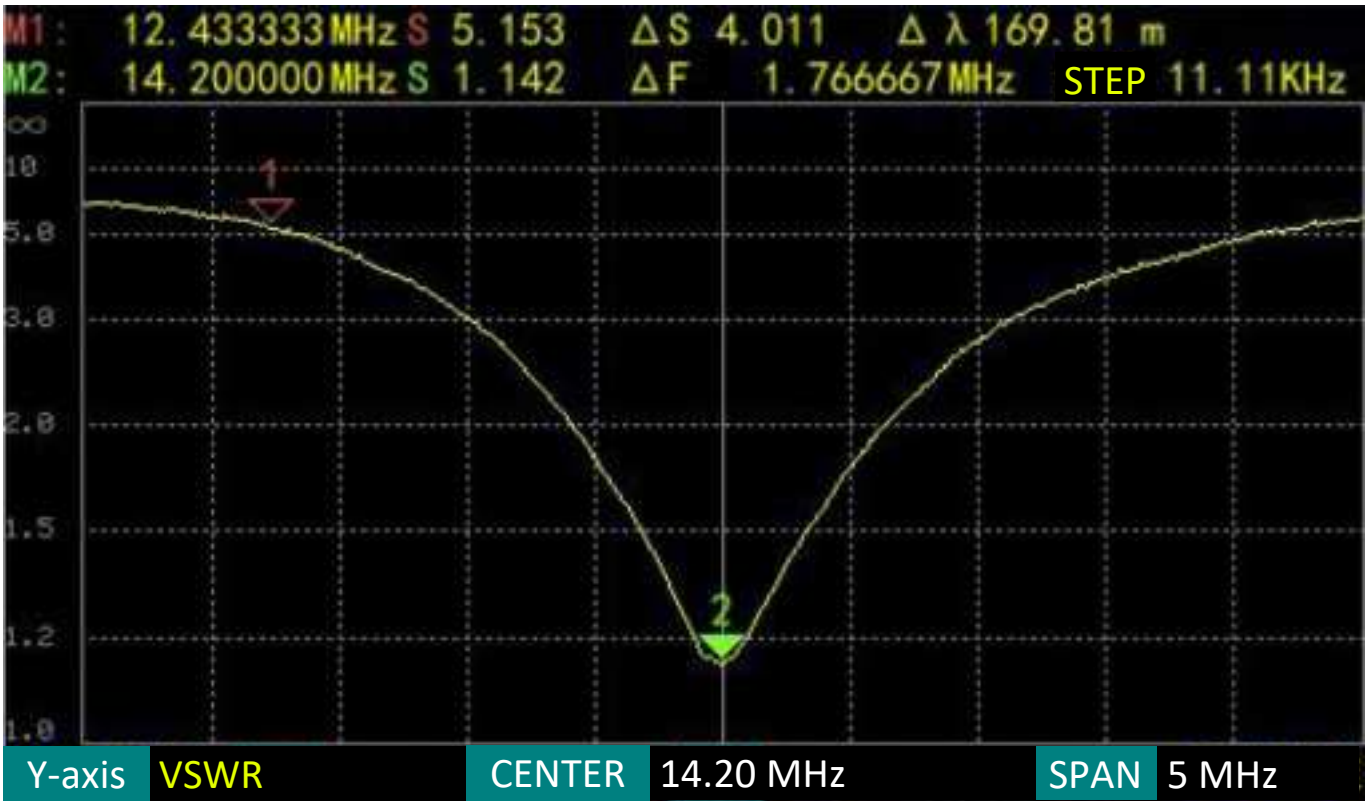
@5.5MHz



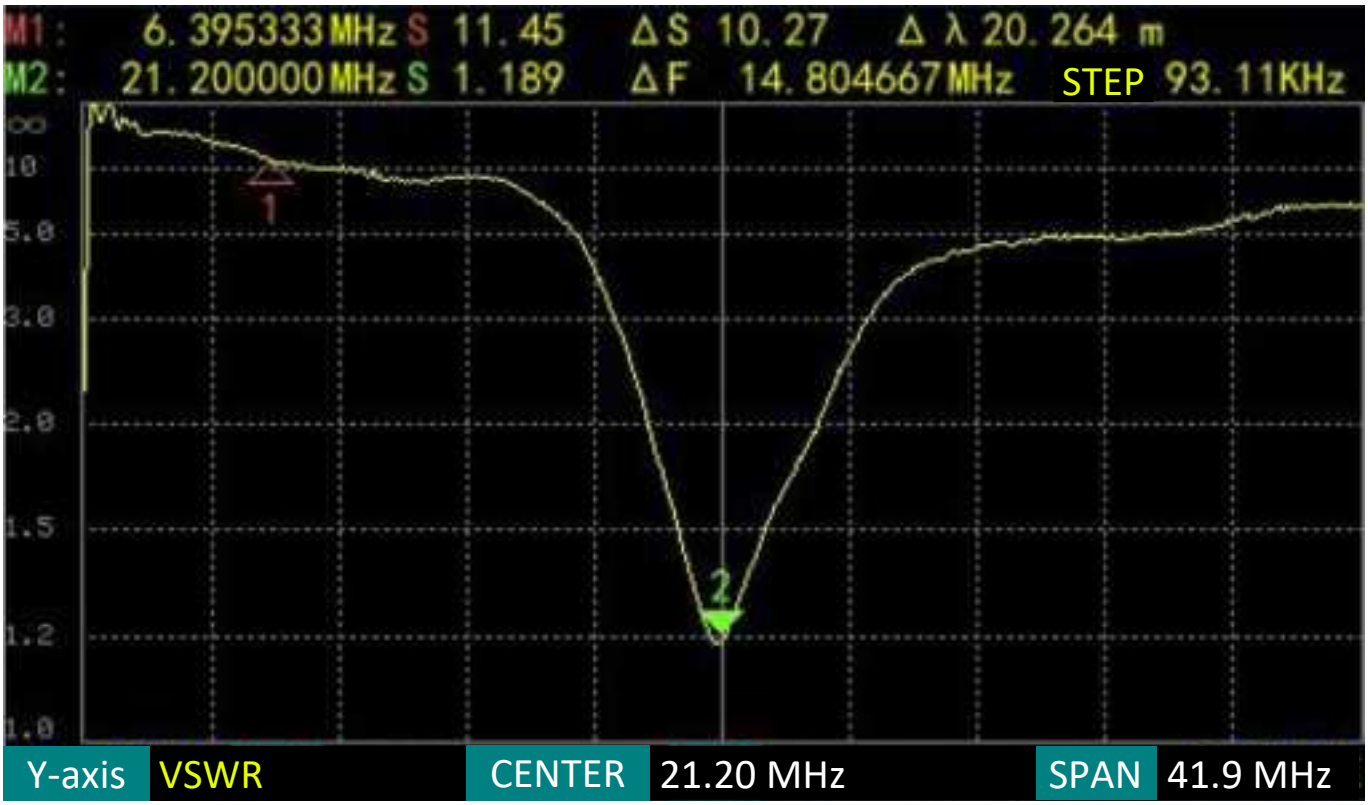
@7.1MHz



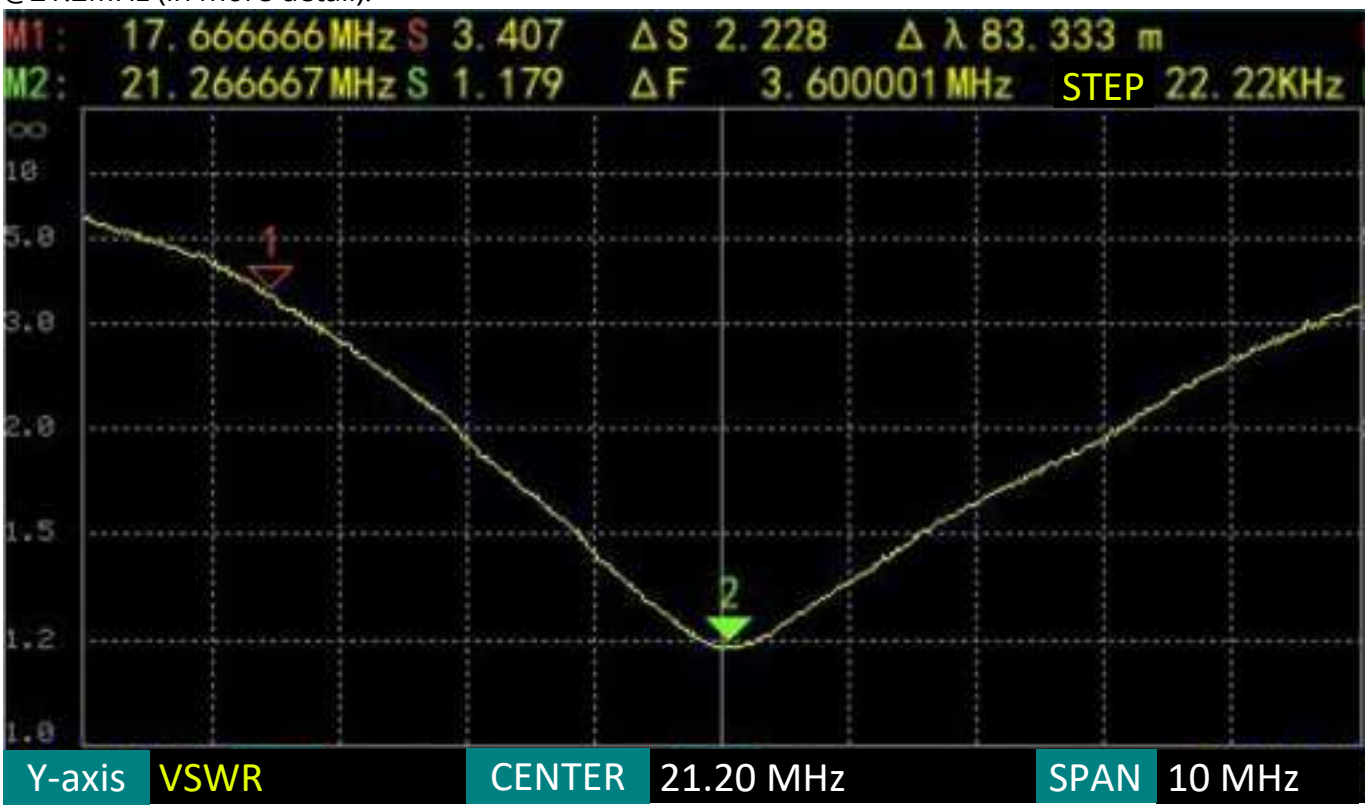
@14.2MHz



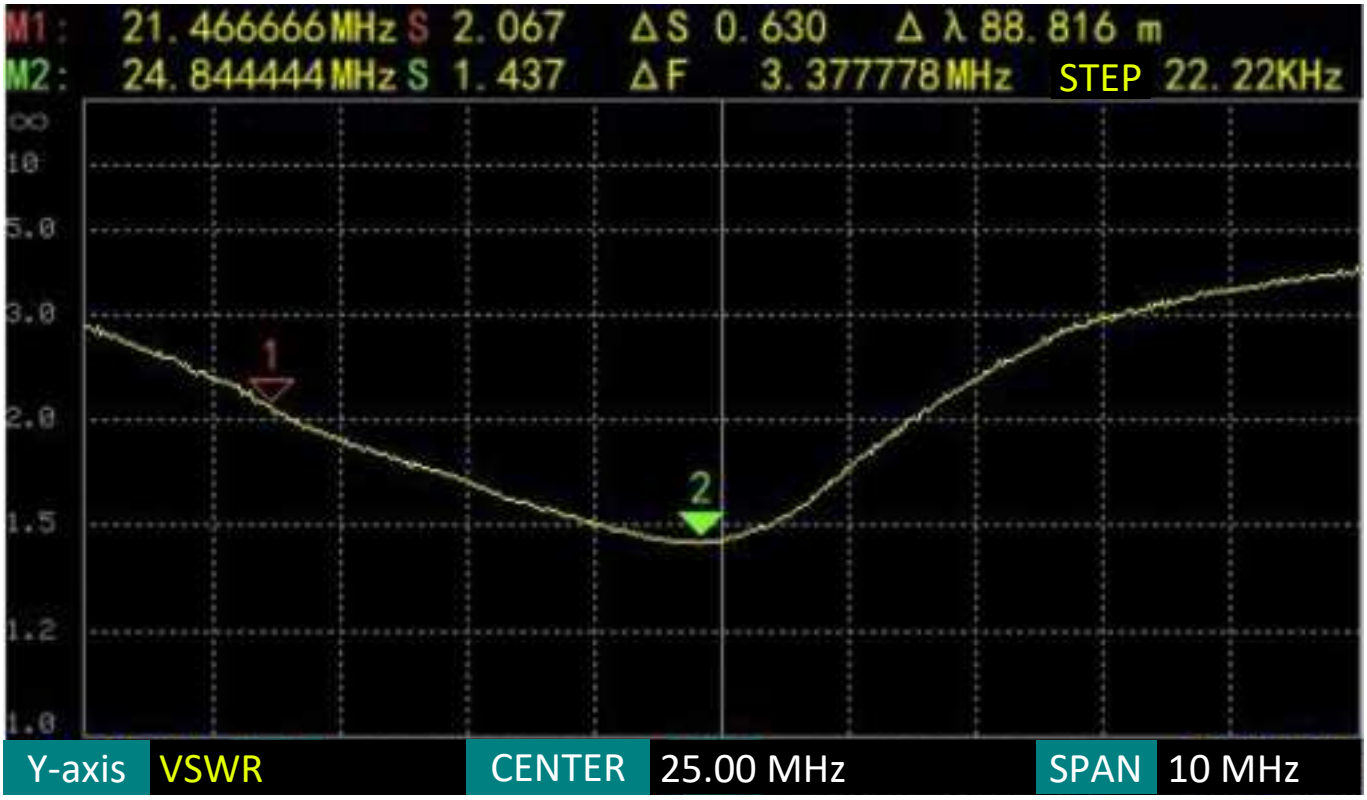
@21.2MHz



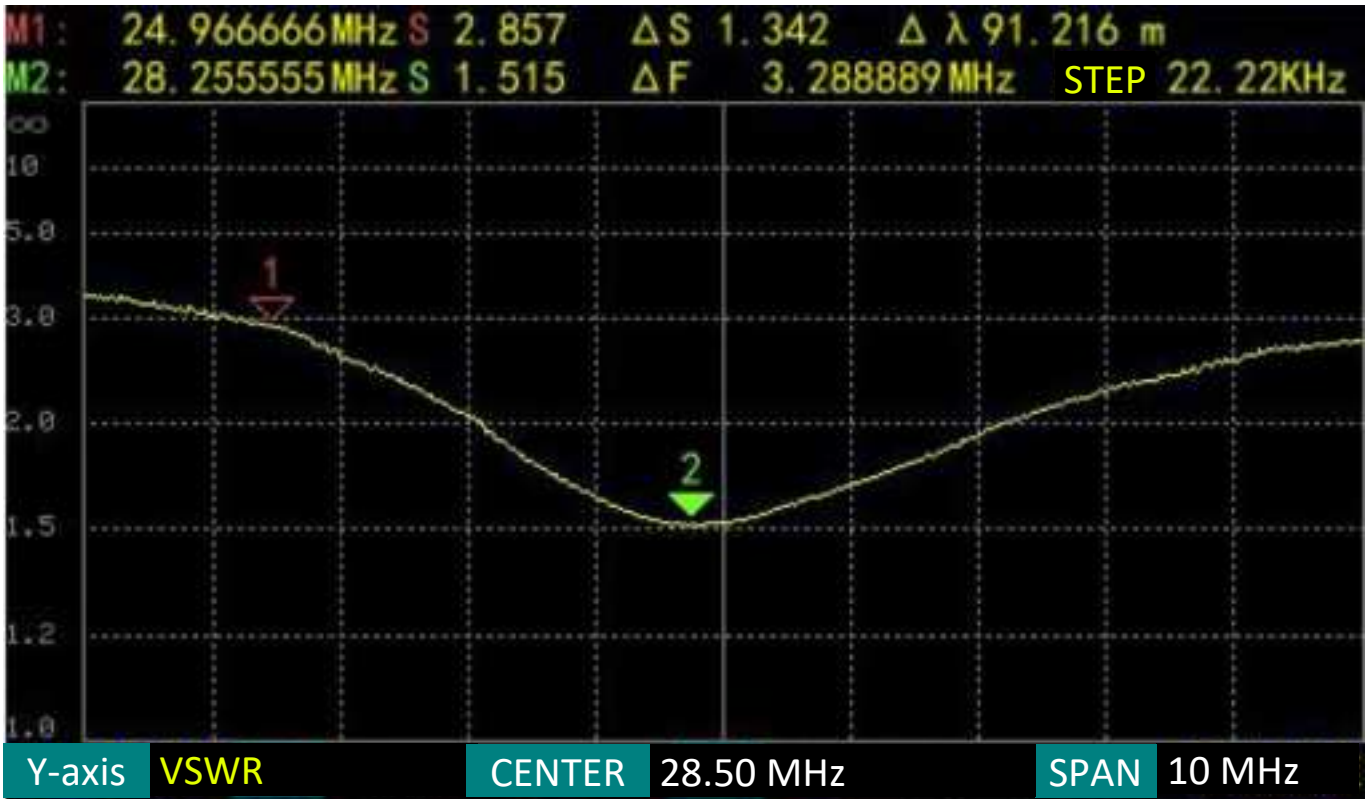
@21.2MHz (in more detail):



@25.0MHz



@28.5MHz



@50.1MHz