

Transmitters with opposite deflection direction (such as Futaba etc.)

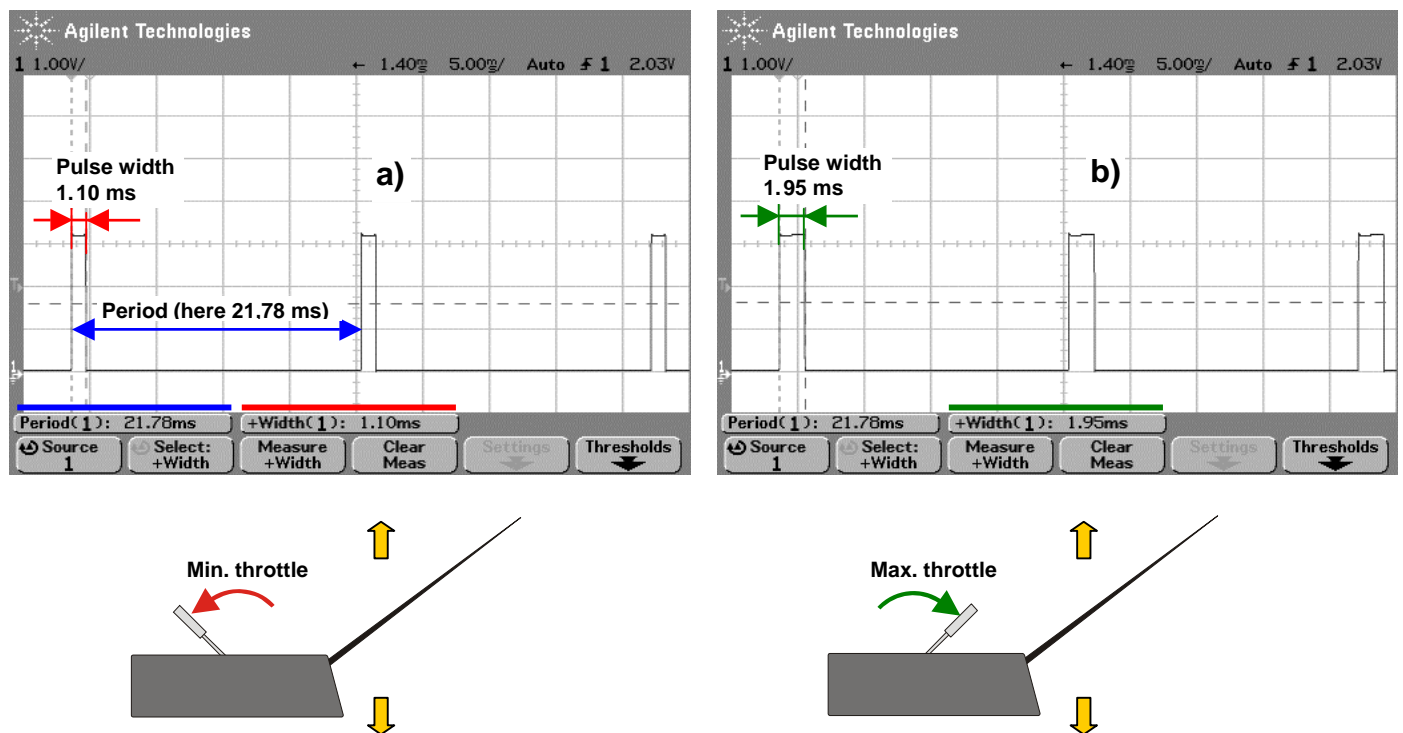
Most of the remote control sets for models use such system of control that in the throttle position "OFF" (=minimal throttle) the control impulses from receiver for servos and controller of motor revolutions have width in the range of ca 1.0 - 1.2 ms and they **widen with more throttle** up to maximal value (maximal throttle), to ca 1.8 – 2.0 ms. These control impulses are periodically repeated each ca 20 ms (depending on the manufacturer and type of the set in the range of 10 – 30 ms). Controllers count on this type of control.

Some sets (e.g. Futaba, at least some of their types) however have the direction of control in the „opposite“ way (set from the manufacturer), that is minimal throttle corresponds with maximal size of the control impulses and they **shrink with more throttle**. In this case the controller seem not to work as it should and it is also not possible to program it according to the manual.

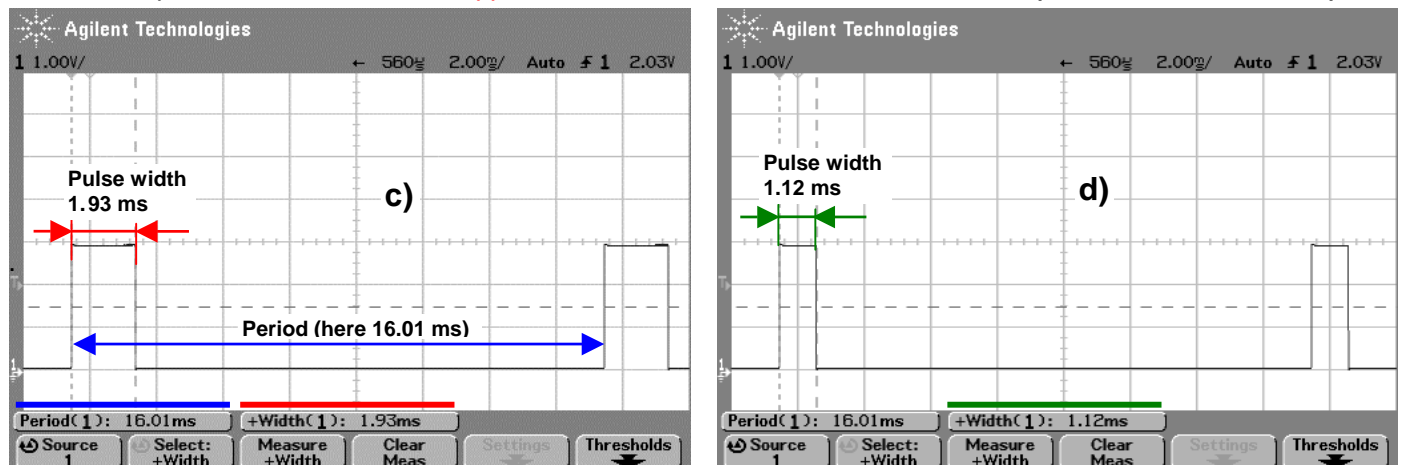
This state is easily recognized – the controller after switch on with transmitter in maximal throttle position does not beep 2x (basic mode) or after 10 seconds 3x (entrance to programming) – of course provided that everything else is connected properly and is functional. To check you may try this with throttle in the opposite position (switching the controller on with minimal throttle). If in this case, there is 3x beep after 10 seconds, your transmitter works with „opposite deflections“. It is only necessary **reverse min. and max. throttle position** on your transmitter and everything will work correctly.

This situation can certainly occur also with a transmitter that has normally set the „correct“ (more commonly used) direction of deflections if you have changed the deflections anytime before on the transmitter yourself. Or you may have bought the transmitter from someone who has changed it.

Graupner MC 16/20, „correct“ direction of deflections, minimal throttle a) and maximal throttle b)



Futaba 6 Exp 2.4 GHz FASST 6/6/0, „opposite“ deflection direction, minimal throttle c) and maximal throttle d)

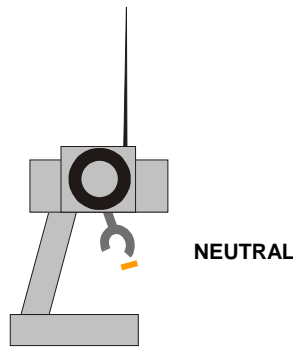
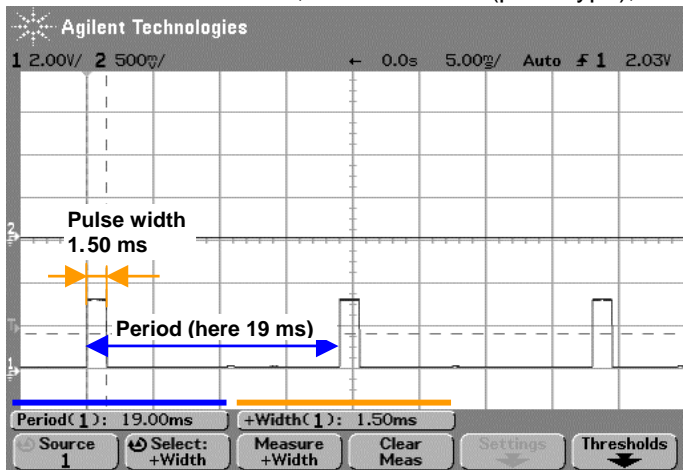


This figure shows, that the control pulses are set in the **opposite**, that means minimal throttle (motor is at standstill) corresponds to the widest control impulse, when adding throttle the pulses get smaller. For better clearness the graph is widened compared to the upper figure.

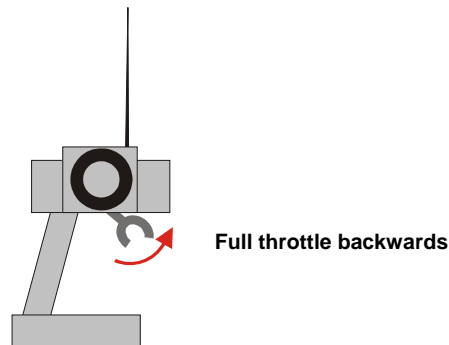
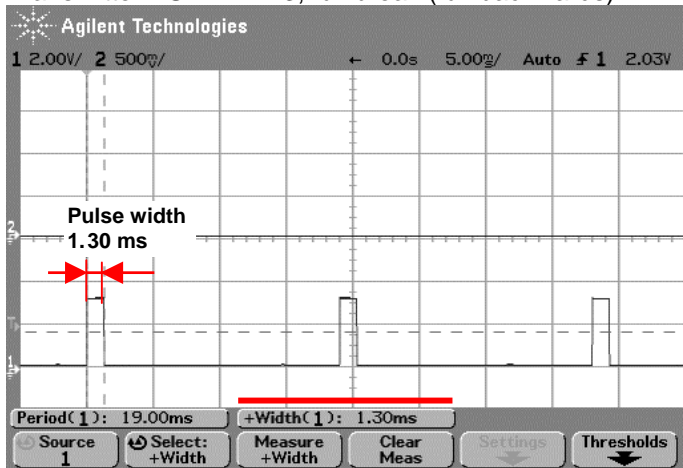
For **pistol grip transmitters** for cars (boats) the situation is similar. . It is more common that when the throttle is in neutral (the width of the control pulses is ca 1.5ms) the motor does not rotate. This is the behavior of most sets and the controller expects such direction of deflections.)

The figure below shows the more common type of control with the „correct“ direction of deflections.

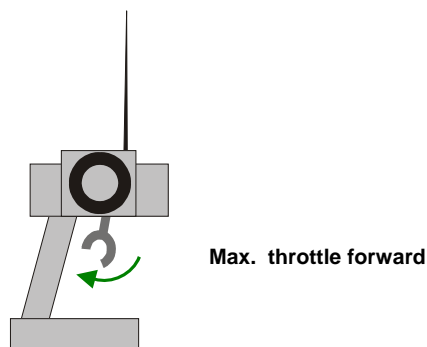
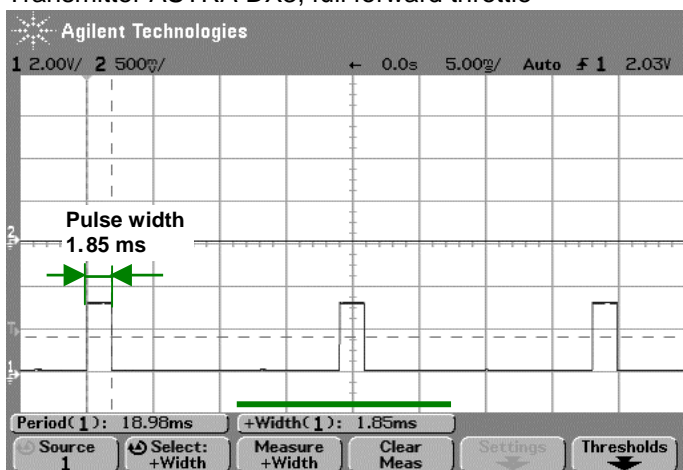
Transmitter ASTRA DX3, throttle neutral (pistol type), 2.4GHz, default settings, forward / backwards ratio is 70:30.



Transmitter ASTRA DX3, full break (full backwards):



Transmitter ASTRA DX3, full forward throttle



If your transmitter has **opposite direction of deflections** (that is with full throttle the impulses are shorter), the issue is the same as for the standard transmitter and the controller seems not to work as it should.

This state is again easily recognized – the controller after switch on with transmitter in maximal throttle position does not beep after 10 seconds 3x (entrance to programming) – of course provided that everything else is connected properly and is functional. To check you may try to start the controller with a transmitter that has the throttle in full backwards positions (=full break). If in this case, there is 3x beep after 10 seconds, your transmitter works with „**opposite deflections**“. It is only necessary **reverse min. and max. throttle position** on your transmitter and everything will work correctly.

In all cases it is best (from the precision of control point of view) to set maximal deflections on the transmitter (125% etc.).