

# CHRONOSPLIT BEST PRACTICES FOR ALPINE SKIING

## TRANSMITTER DISPLACEMENT DISTANCES at FINISH

At the finish or intermediate locations where speeds over 50km/h are expected, place the transmitter downhill from the photocell trigger point by a suitable distance.

There is a constant (and very precise) "system latency" that translates into a delay of 0.2 sec from the moment any transmitter receives a pulse from the photocell gate and when it is transmitted and received by the HL 640 watch carried by the athlete.

To ensure the best possible overall performance at locations where athletes are moving quickly and to compensate for the system latency (delay) at the finish (or intermediate) relative to the speed of the athlete at that point, displacing the transmitter downhill will mean that the radio distance from the transmitter to the watch being carried by the athlete will be minimized (by design the transmitter distance is limited to 20-30 meters).

In most cases this Transmitter displacement only needs to be 5 - 8 meters or so to improve performance and to change the angle of "view" that the watch has to the transmitter. If you are missing finish times every now and then, this is the fix.

The table below gives some suggested downhill "offset" distances at different speeds relative to the .02 sec system latency.

Speed Km/h	Recommended Offset @ 0.2 sec
50	= 2.8 meters
60	= 3.3 meters
70	= 3.9 meters
80	= 4.5 meters
90	= 5.0 meters
100	= 5.5 meters
110	= 6.1 meters
120	= 6.7 meters
130	= 7.2 meters

## HL 640 WATCH POSITIONING

Placement on the body of the HL 640 ChronoSplit watch relative to the incoming radio transmissions from the HL 640-1 transmitter can be a factor in some high-speed applications. Consider where the transmitters will be placed (see above) and also do whatever you can to ensure the ChronoSplit is carried where it has a clear, unobstructed RF path to the transmitter signal (not blocked by the body itself). This is most easily accomplished in most cases by displacing the transmitter downhill (8-10 meters) from the trigger point so that the radio signals reach the watch head-on. If you have a pocket, place it on the side that the transmitter is facing as opposed to the other side of the body.

## ANTENNAS

Place Antennas on their own pole so they stand straight up and are clear of any obstruction. Best range is associated with higher placement (no less than 1 meter above snow surface). The only location that you may wish to limit transmit range would be at the start. To do so you can place the transmitter and antenna horizontal to signal path, or mount vertically below the start gate itself.