

# Burn Time Calc MFD 2.3



## Burn Time MFD Version 2.x short description

What can this MFD do?

In simple words: It helps you to get your deltaV right. This can be done in multiple ways and in different situations.

The simplest situation is if you change your dV “now”. But the MFD can also change your dV on apoapsis, periapsis and on the right moment if you will intercept the ISS. For doing this right, the MFD will calculate your mass, including fuel mass, taken under consideration the flow rate of your fuel. Also docked vessel will be taken into account.

In the following, I will describe how to do this.

### Change dV “now”

This is very easy: Press MFD-Button dV. Enter the dV into the input box and press BRN.

### Change dV on a given countdown

Because it takes time to accelerate, the countdown refers to the point on which you have already accelerated the half dV of your manoeuvre. To do this, press dT, enter the time. Then press dV and enter your dV. After that, press ARM and the countdown will be start.

### Change dV on Apoapsis / Periapsis

Press MD until “Time to Periapsis / Apoapsis” is shown in the display. Then enter your dV and press ARM.

### Circularize orbit on Apoapsis / Periapsis

If you wish that your orbit will be a circle (useful for entering orbit from a interplanetary trip), do the steps like in “Change dV on Apoapsis / Periapsis”. Instead entering dV, press CIR. Then start the prograde (for Periapsis) / retrograde (Apoapsis) autopilot of Orbiter. The rest will be done automatically.

### Get dV to zero on ISS incoming from a interplanetary trip

Because this is only a bit more complicated, I will describe this by a short tutorial. But no panic, everyone can do this.

Open the scenario “ISSIntercept.scn”. You are incoming to earth intercepting the ISS.

Instead of using your HUD showing the vector relative to ISS, you can also use IMFD. But I will describe the way using your HUD.

At first, we have to open the nosecone (Press K).

Press “H” 2 times, until HUD-Mode is “DOCK”.

Press SHIFT + F1, then SHIFT + C to open the NAV COM MFD.

Enter the ISS XPDR Frequency (131.30) into NAV1.

Activate Orbiters retrograde Autopilot.

Open TransX (SHIFT+J)

Press ADJ, then ++ and enter “iss”

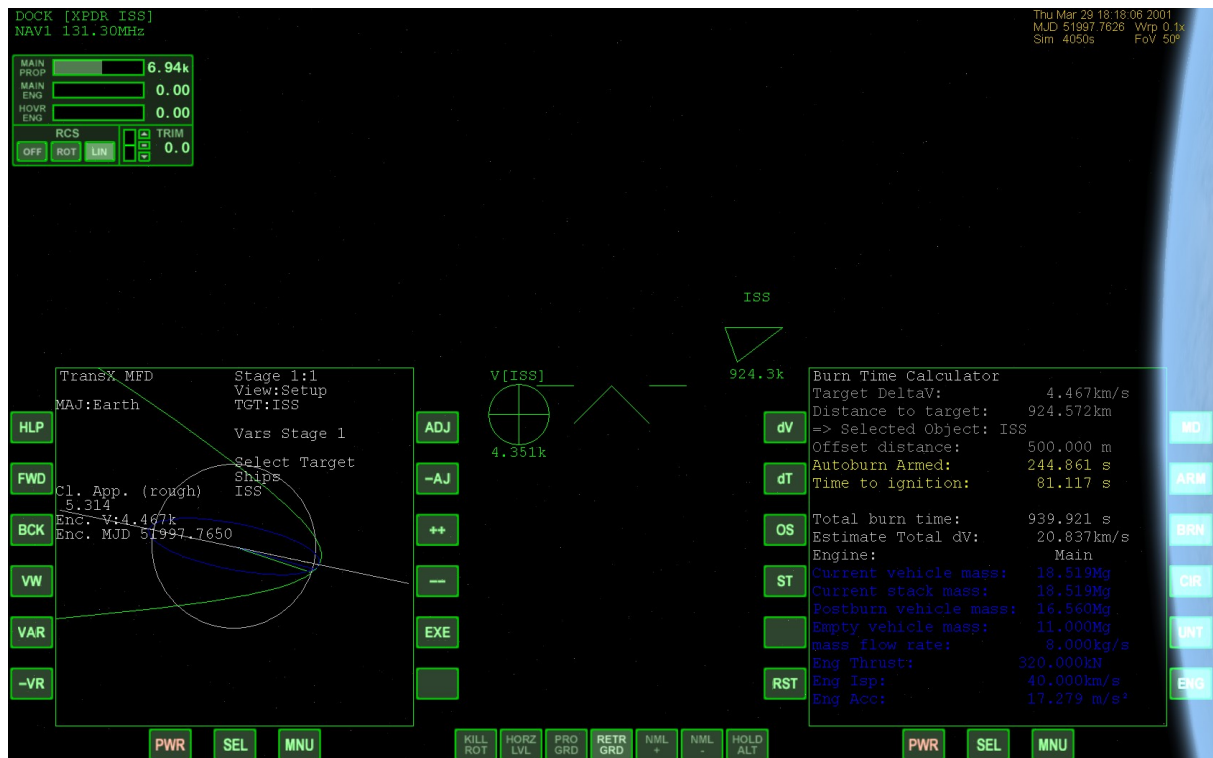
On the other side, open the BurnTimeCalculator MFD

Press dV and enter the “enc. V” value from TransX into the box (ca. 4467 m/s)

Press ST, enter “iss”

Press ARM

Now you can go bed and sleep a bit, alternately we can use timeacceleration, until Time to ignition is about 100. Now you will see something like these:



Deactivate your Autopilot and align your vector. Rotate, until your vector designator looks like:



even during the burn.

If your engines have stopped, go outside and look backward. If you have done all this steps right, you will see the ISS on your back.

On a try, the difference to the standard offset (500m) was only 150m, I think that's acceptable if you remember, that this is only a time difference of  $150\text{m}/(4445\text{m/s}) = 0.03\text{s}$  at the point of ignition.

**Have fun!**  
Topper