

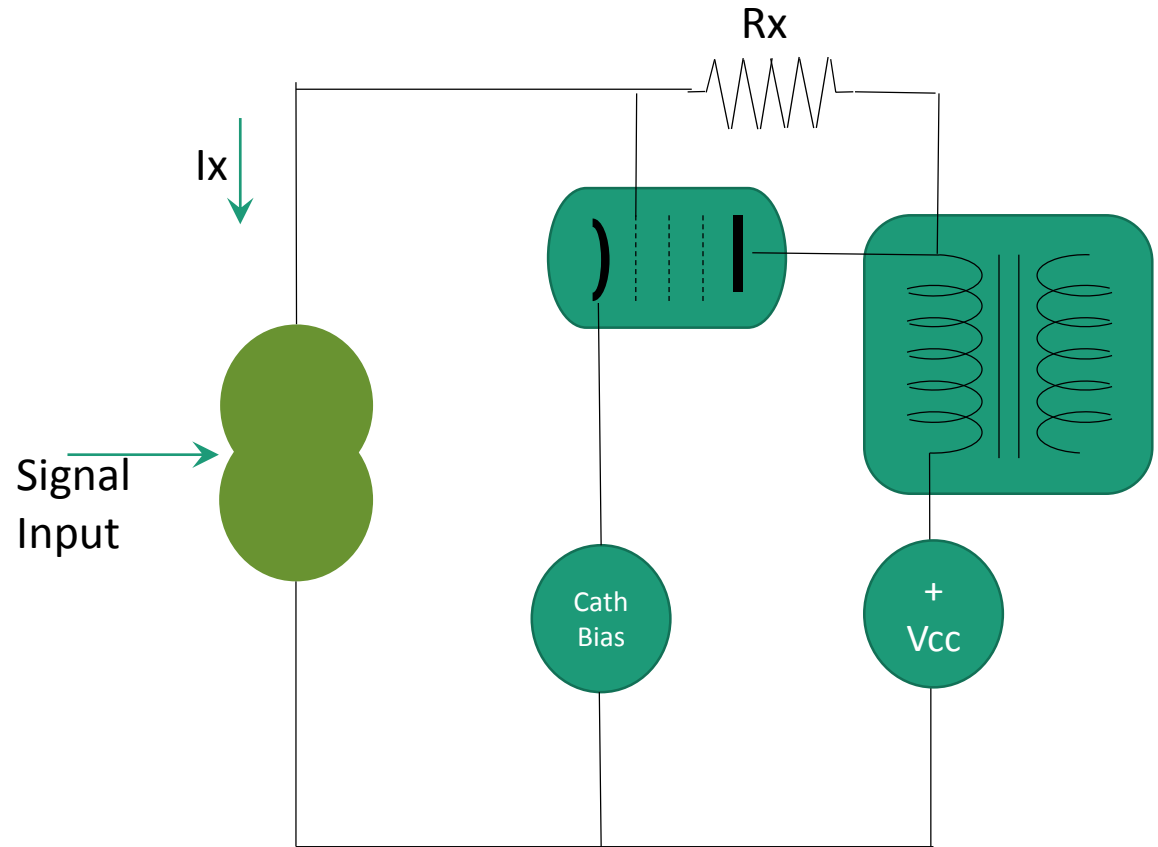
- Vaucottes II -

The Cuthbert Edition



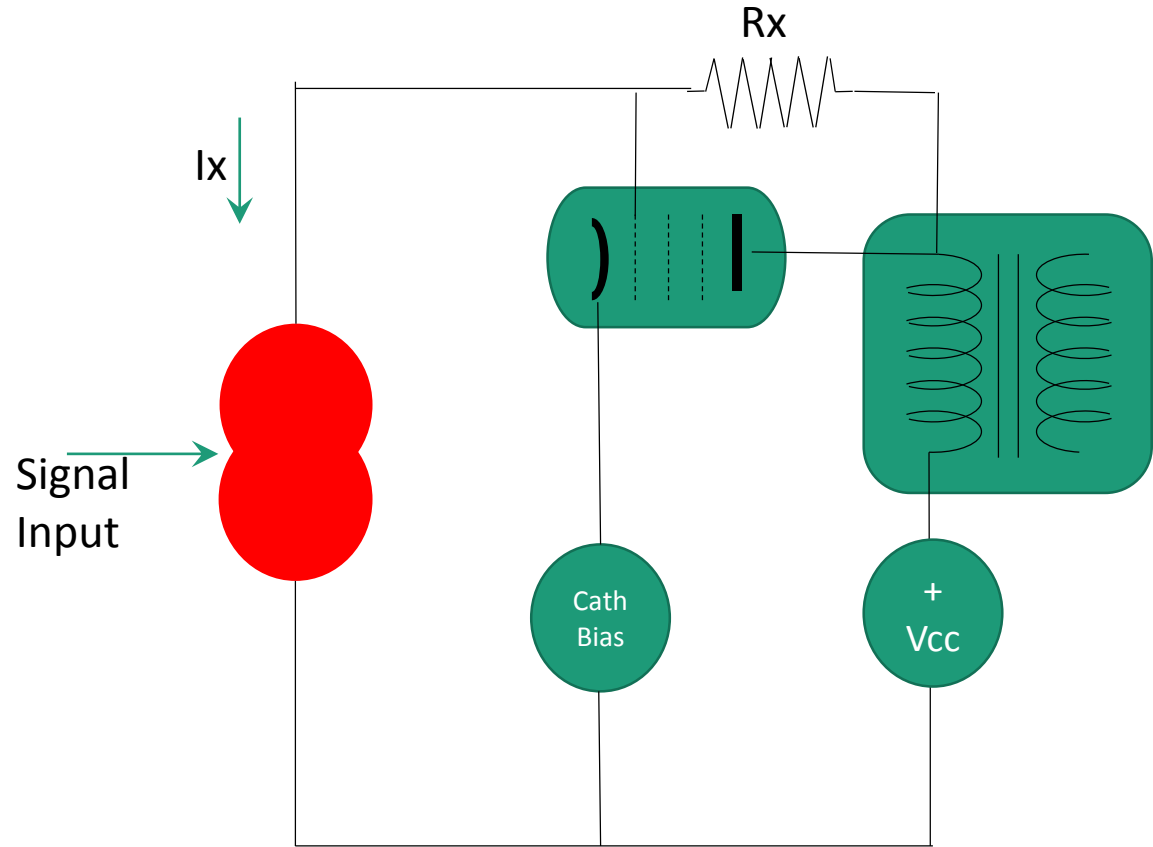
Bases

- A Trans-X output stage is based on a pentode and must be fed by a current source
- The output voltage is proportional to the current swing I_x times R_x !



The current source must :

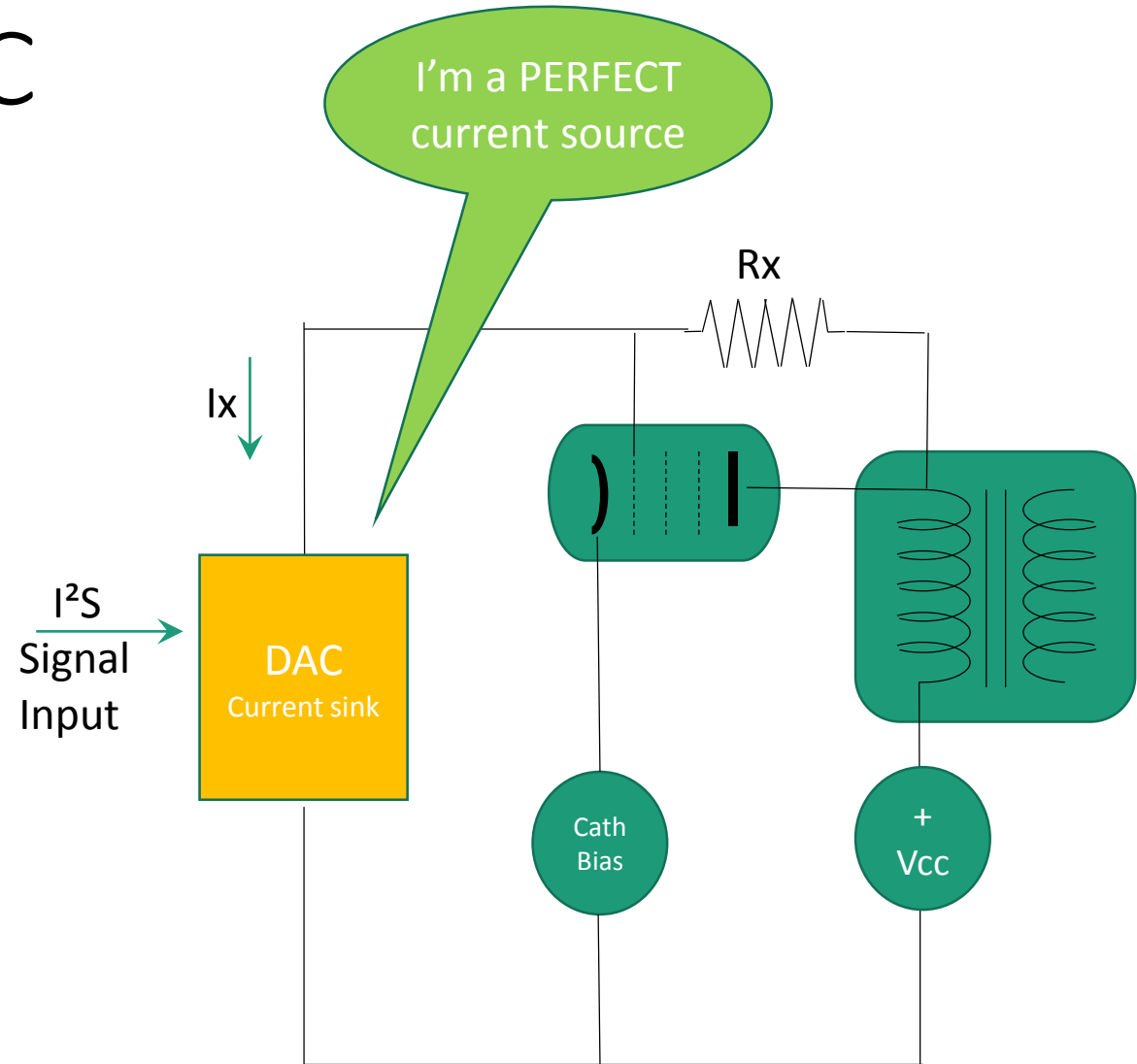
- Provide a swing I_x perfectly proportional to the input signal
- Have an internal resistor as high as possible (> 1 meg)



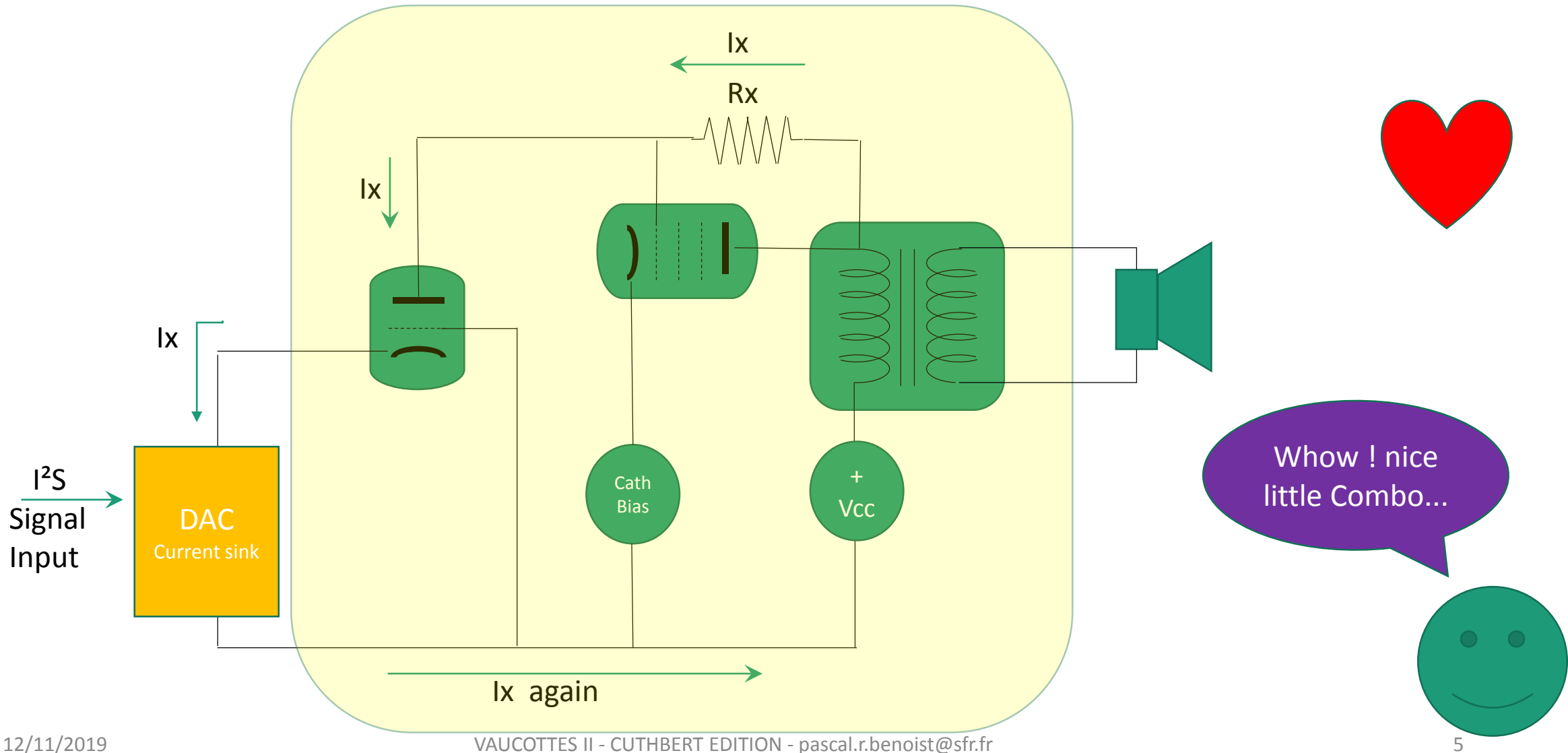
The Current source defaults reduce dramatically the quality of the output signal

The Idea : Use a DAC

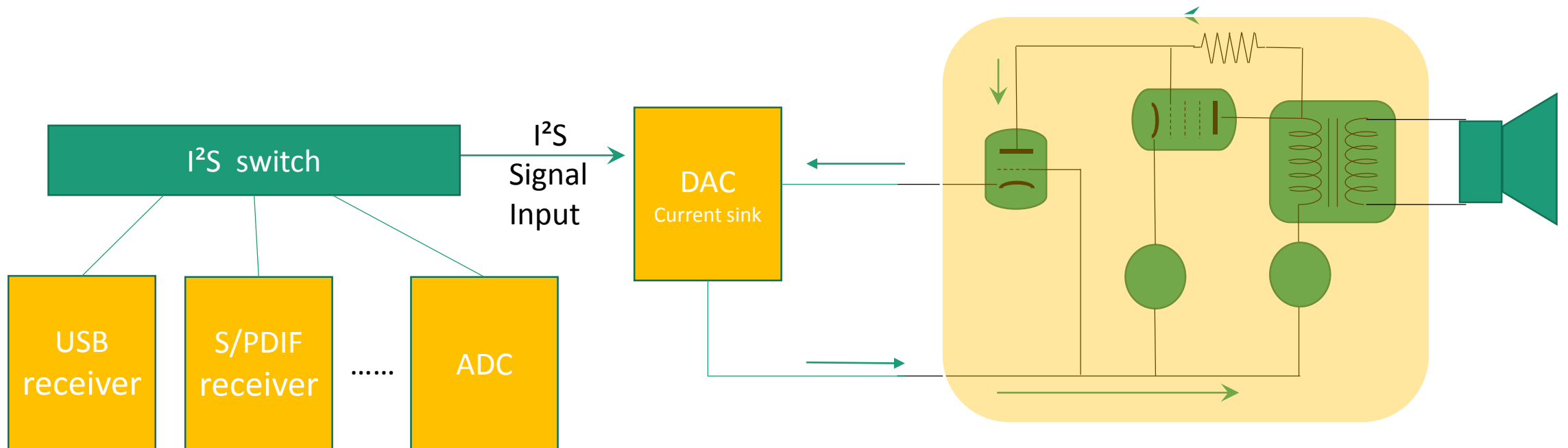
- A DAC with a current output is – almost - a perfect current source
- BUT**
- It will not cope with the large voltage swing of the control grid
 - Its internal resistor is not sufficient



A solution : A nice and easy to use Combo



The global solution



Combo's figures corner (Prototype figures)

OUTPUT POWER FOR A
1.1 MA SWING : 6.25
WRMS

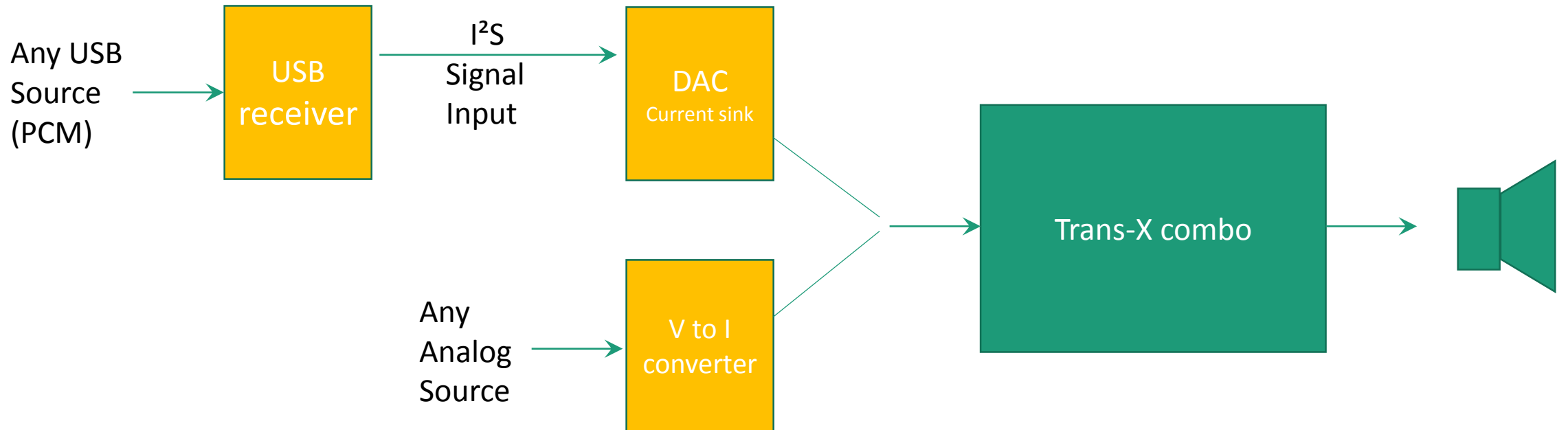
DAMPING FACTOR : 8

INPUT IMPEDANCE : 20
OHM

MINIMUM PARASITIC
RESISTANCE OF INPUT
DEVICE (CURRENT SINK) :
2 KOHM

The prototype

An alternative to support 'vintage' sources



Advantages

Signal path between the DAC and the speaker is minimized

A simple DAC can drive High Power tubes

The Trans-X advantages :

- Low distortion
- Minimum phase shift
- Very high PSSR
- Very high SNR
- Good damping factor, typically 5 to 10.

SCHEmATICS

