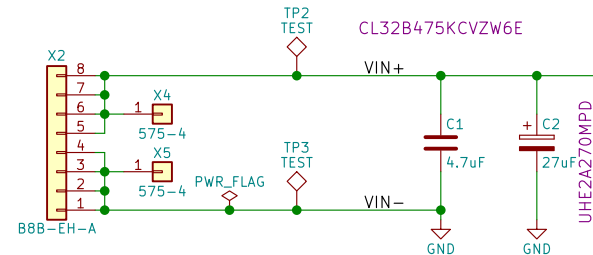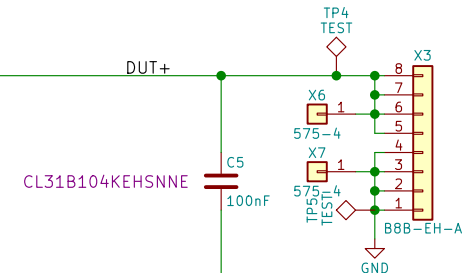# −10dB DC LISN 5µH

This is a 5µH DC LISN intended for EMC pre compliance measurements
of conducted emission.
It has an attenuation of −10dB and overvoltage protection.
It must be connected to a 50 Ohm spectrum anaylzer input,
or terminated with 50 Ohm termination resistor.
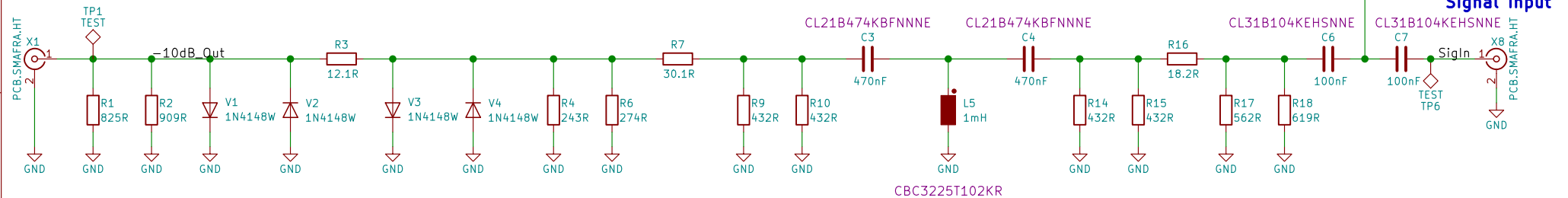The circuit is a partial implementation of LinearTechnology's
DC2130A.

Power Input

TP2 TEST

CL32B475KCVZW6E

X2
8
7
6
5 X4 1
4 575−4
3 X5 1
2 575−4
1

B8B−EH−A

VIN+

PWR_FLAG

TP3 TEST

VIN−

C1 4.7uF

+ C2 27uF
UHE2A270MPD

GND   GND

R5 261R   R8 261R   R11 261R   R12 261R   R13 261R

L1 1.1uH   L2 1.1uH   L3 1.1uH   L4 1.1uH   L6 1.1uH
744314110 744314110 744314110 744314110 744314110

VIN+(eff): +60V
I(eff): 10A
Attenuation: −10dB
Impedance: 50 Ohm

DUT+

Power Output

TP4 TEST

X3
8
7
X6 1 6
575−4 5
4
X7 1 3
575−4 2
1
B8B−EH−A

TP5 TEST

CL31B104KEHSNNE

C5 100nF

GND

Spectrum Analyzer

X1 1
PCB.SMAFRA.HT
2

TP1 TEST

−10dB_Out

R1 825R   R2 909R   V1 1N4148W   V2 1N4148W   V3 1N4148W   V4 1N4148W   R4 243R   R6 274R

R3 12.1R

R7 30.1R

R9 432R   R10 432R

C3 470nF   CL21B474KBFNNNE

L5 1mH
CBC3225T102KR

C4 470nF   CL21B474KBFNNNE

R16 18.2R

R14 432R   R15 432R   R17 562R   R18 619R

CL31B104KEHSNNE   CL31B104KEHSNNE

C6 100nF   C7 100nF

Signal Input

SigIn 1 X8
PCB.SMAFRA.HT
2

TP6 TEST

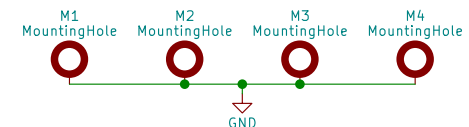GND (many GND symbols along bottom)

Remarks:

R5, R8, R11, R12 and R13 are damping resistors for the inductors.
They are not mounted by default.

The 10dB attenuator can be used as standalone when
C5 is unmounted and C7 and X8 are mounted.
C7 and X8 are not mounted by default.

Testpoints TP2, TP3, TP4 and TP5 can be used
to solder wires to the PCB.
It is useful when mounting the LISN inside a housing
using banana jack binding posts, which do not directly
fit to the PCB.
Therefore the X4, X5, X6 and X7 low cost PCB mount
banana plug sockets are not mounted by default.

Housing:
Fischer Elektronik
AKG 71 24 100 ME

Banana jack binding posts:
2x 3760−0 (Pomona, black)
2x 3760−2 (Pomona, red)
Binding posts are mounted on the faceplate
and soldered to TP2, TP3, TP4 and TP5 with short cables.

M1 MountingHole   M2 MountingHole   M3 MountingHole   M4 MountingHole

GND