Issued by:	Date:	Doc.no:
KI/EIS ZU/TR J Kruse/mwd	1987-06-30	ZU/TR 7076.

PROJECT FTZ/PTZ (BUNDESPOST)

To approve existing cables for connection of Ericsson DPU, PCU and EPC a quality check must be done.

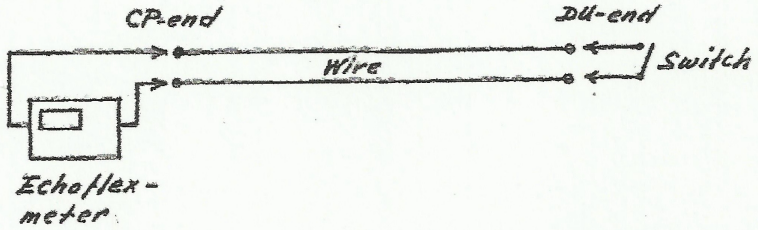
EQUIPMENT REQUIRED

* Oscilloscope 2 chan. 50 MHz
* Digital voltmeter (> 3 digits) for resistance measurement
* Echoflexmeter T11/1A HDW Elektronik
  P.O. Box 146440
  D-2300 Kiel 14
  Telephone 0431/7000
  Telex 292976 HDWKE
* Eye generator LPE 202 0033 (Ericsson)
* Signal generator 300 kHz (sinus)
  > 4V output into 150 ohm load.

The verification is done in 3 steps:

1 REFLEXMEASUREMENT

* Connect the Echoflexmeter to that end of the cable where the CP is going to be connected.
* Follow manufacturers instruction for length measurement. Max. 1500 m length allowed. Reflections with both open end and short circuit at DU end.

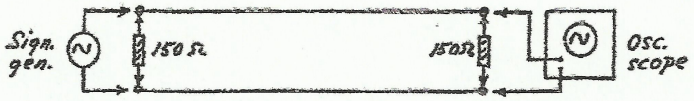


ERICSSON INFORMATION SYSTEMS AB

ZU/TF 7076

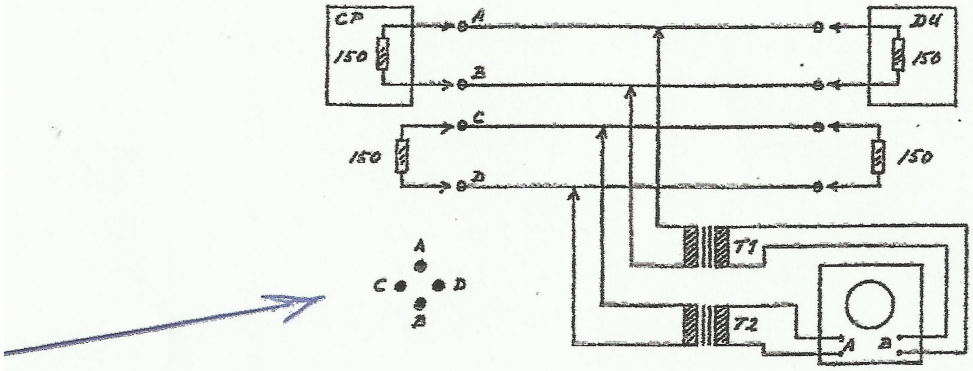
2 DAMPING MEASUREMENT

* Terminate both ends with 150 ohm load.
* Connect a signal generator at one end (300 kHz 4V p.p).
* Check at both ends and verify that there is max 15 dB damping both ways.



3 CROSSTALK

* Choise a 4 wire cable and connect as figure



4 wire cable
T1, T2 = Transformer
Part No. 66500274 or equiv.

* Measure p-p value on oscilloscope 10 - 15 mV is normal
< 50 mV p-p is OK.
40 mV

Obs! Pilen pekar på ”fyrskruven”.
A & B är ett kabelpar och C & D är det andra kabelparet.

After verification is finished record your values in a logbook as reference for later use.
If cabling is changed repeat the verification and compare with the logbook. If values are out of range, measures should be taken to correct the cabling to fullfill the specified values.

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Svenska Radio AB (SRA) Kista, Stockholm.
1/12-77 --- 29/3-84

Avd: Service och teknisk support.
Installation and maintenance
Maintenance department
Servicesection

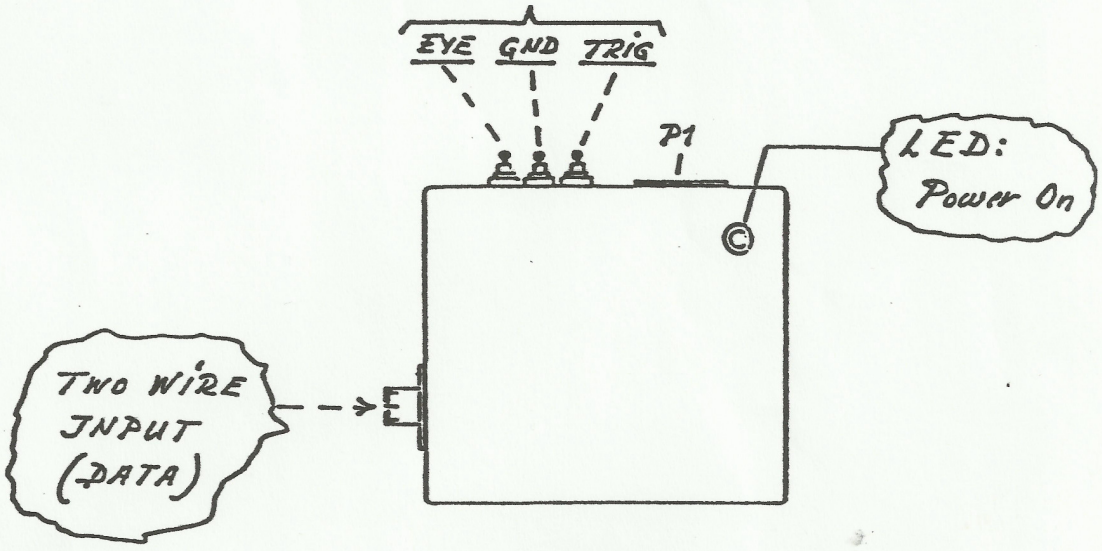
BILDSKÄRMAR, ÖVRIG PRESENTATIONSUTR: 800-999

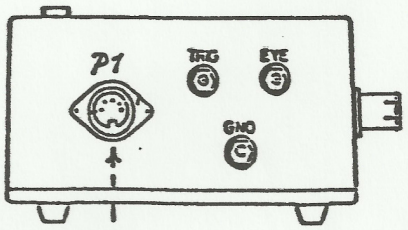
JOHNNY KRUSE: teknisk support (internationell-) och ansvarig för utbildning, reservdelsupplägg och modifieringar av följande produkter:

BILDSKÄRM:	Allmänt	800
-"-	Minibee 2	801
-"-	Minibee 4	802
-"-	Beehive B-100	803
-"-	Beehive B-200	804
-"-	Superbee	805
-"-	Hazeltine 2000	806
-"-	Tandberg 2000	807
-"-	Intensa	808
ANPASSNING:	Tandberg 2000	809
BILDSKÄRM:	Tandb. 2114-2116	811
-"-	ITT 3280	812
-"-	Beehive B-102	819
-"-	Beehive B-152	820
-"-	Midas 3	821
-"-	Visual	823
-"-	Informer D304	824
-"-	TDV 2200	825
-"-	DG 6053	826
-"-	ADM-3	831
-"-	Infoton	832
-"-	ADDS 380	833
-"-	ADDS 980	834
-"-	Informer D311	835
-"-	Ann Arbor	841
-" -	SRA 6251-11	842

30/3-1984 överfördes bildskärmen SRA 6251-11 till EIS.

"EYE-GENERATOR" / LPE 202 0033

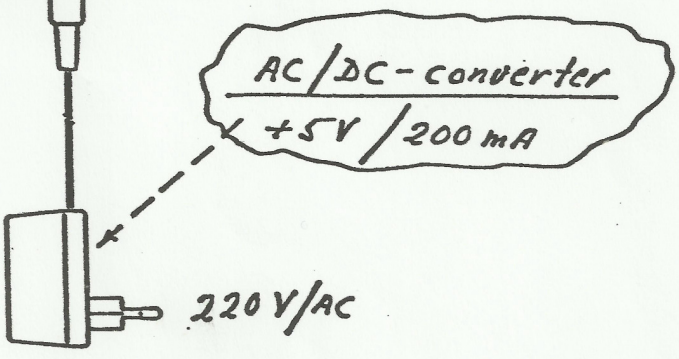




P1:

1+4 = +5V

3+5 = 0V



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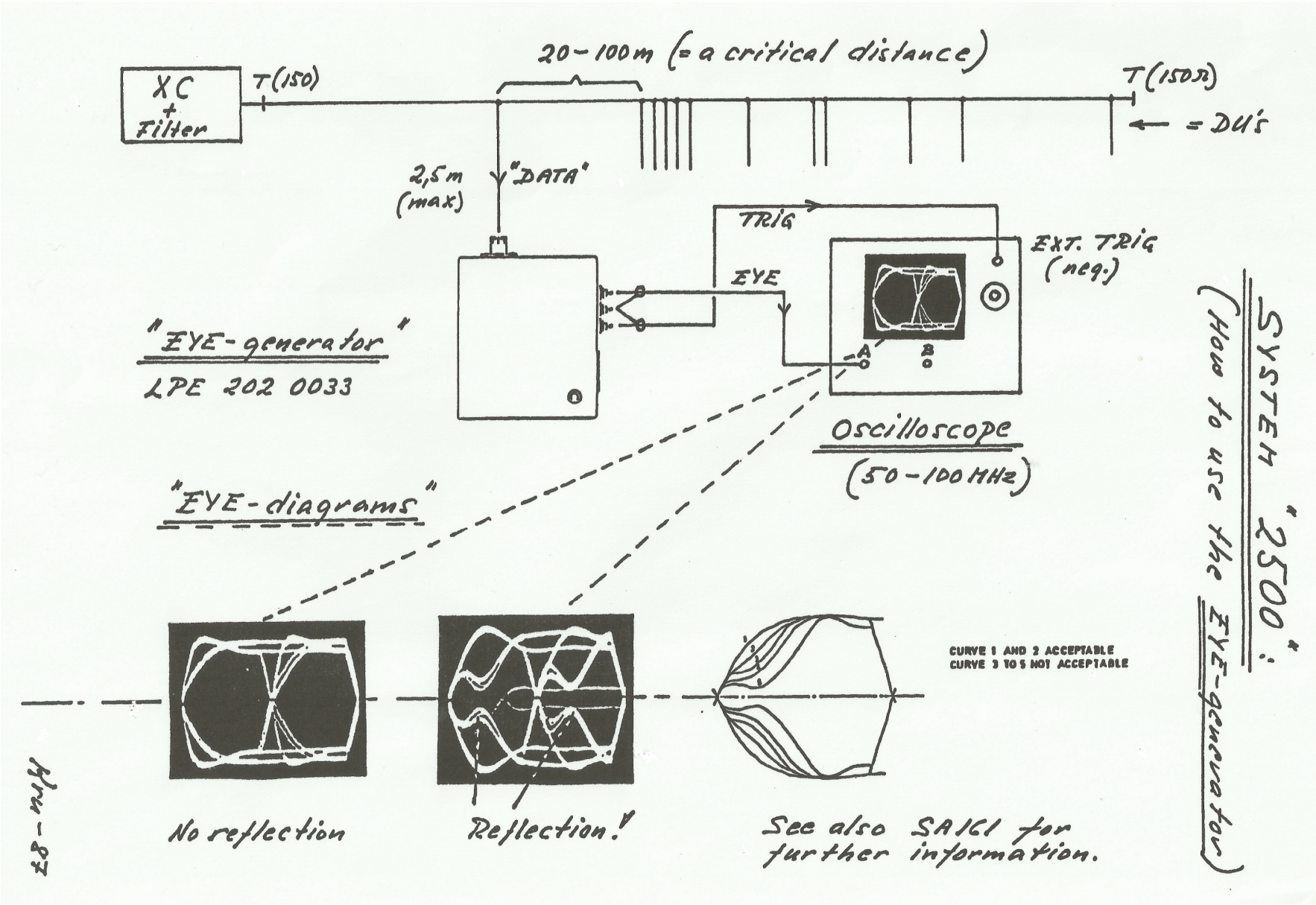
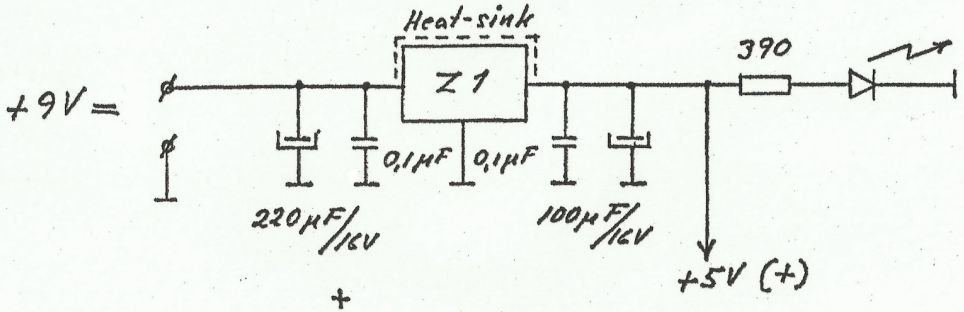
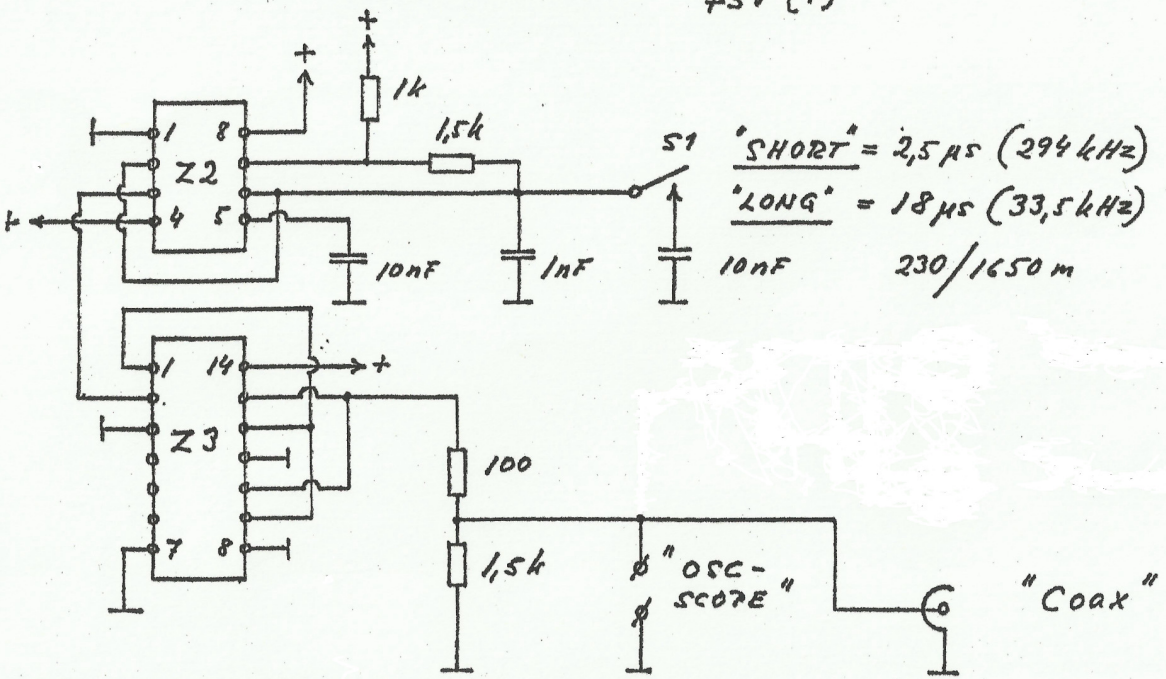
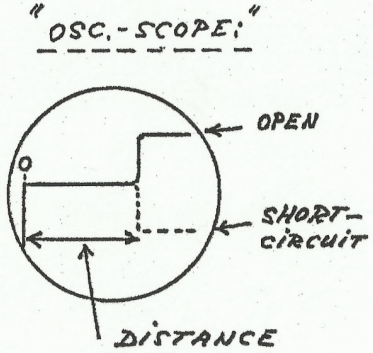

20-100m (= a critical distance)
XC + Filter
T(150)
T(150R)
= DU's
2,5m (max)
"DATA"
TRIG
EXT. TRIG (neg.)
EYE
"EYE-generator"
LPE 202 0033
A
B
Oscilloscope
(50-100 MHz)
"EYE-diagrams"
CURVE 1 AND 2 ACCEPTABLE
CURVE 3 TO 5 NOT ACCEPTABLE
No reflection
Reflection!
See also SAICI for further information.
SYSTEM "2500":
(How to use the EYE-generator)
28-Jun-84

TDR: Time Domain Reflectometer





"SHORT" = 2,5 µs (294 kHz)
"LONG" = 18 µs (33,5 kHz)
230/1650 m



Z1 = 78M05 HC
Z2 = 555
Z3 = 74LS28

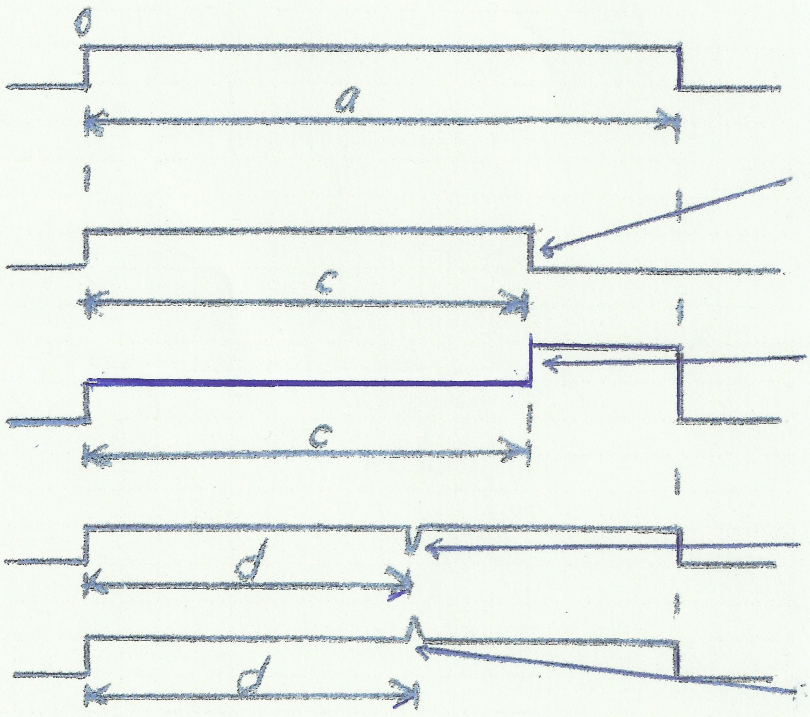
Bru

LAN - Cables:

Ethernet	50 ohms
RG - 58 A/U	50 ohms
RG - 59/U	75 ohms
RG - 62/U	93 ohms
Unshielded twisted pair	100-120 ohms
Shielded twisted pair	150 ohms

TDR – Time Domain Reflectometer:

Pulslängden a skall vara längre eller ha en ”löptid”, som är längre än ”kabellängden”.



Total reflexion vid kortsluten kabel-ände.

Total reflexion vid öppen kabel-ände.

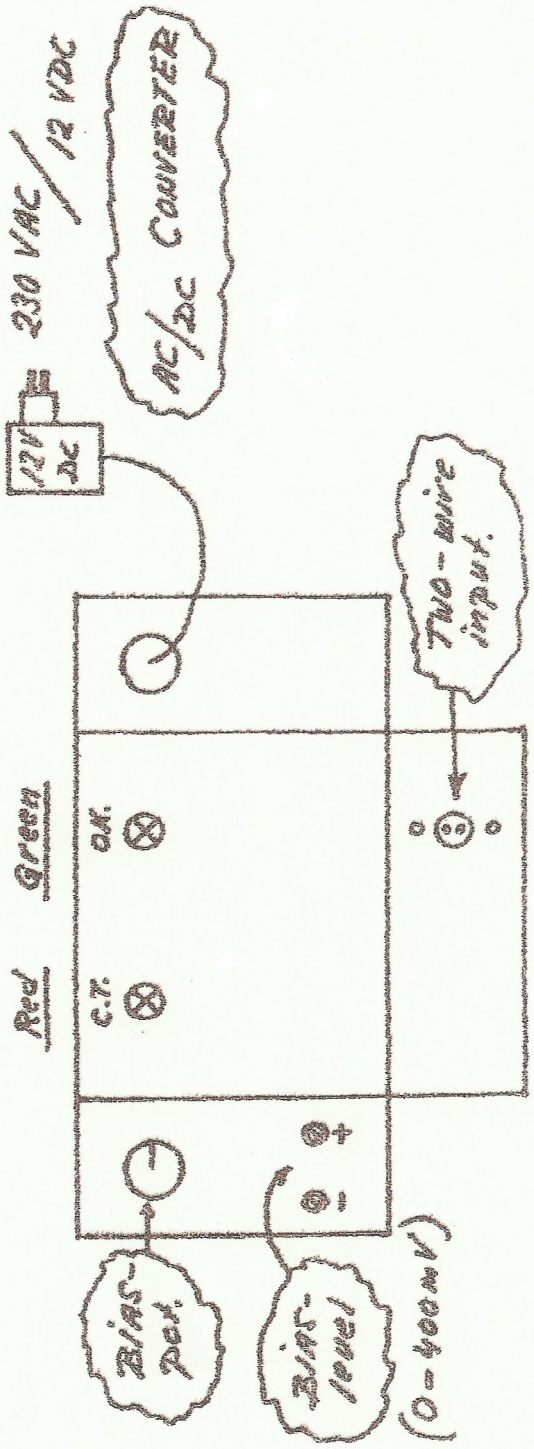
Ex. på en ”klämd” kabel.

Ex. på en ”skadad” kabelskärm.

Cross Talk Decoder (CT/D) :

Funktion :

1. Red LED och Green LED <u>blinkar</u> : Crosstalk !
2. Bara Green LED <u>lyser</u> : Ingen Crosstalk !
3. BIAS level (0 - 400mV) : Two Wire R.M.S.



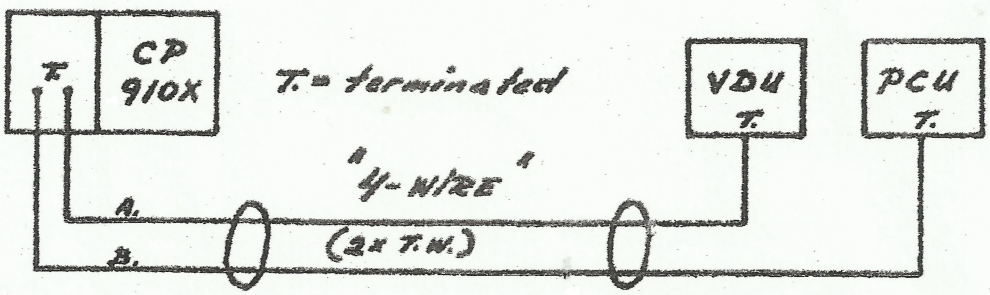


Fig. 2a

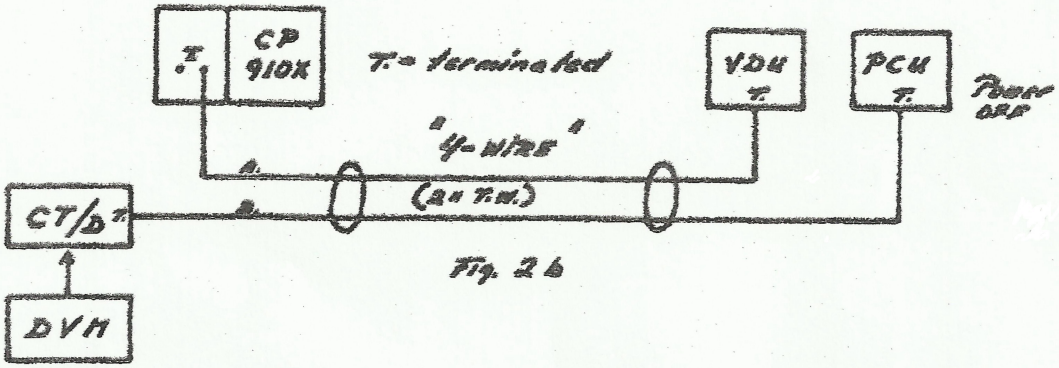


Fig. 2b

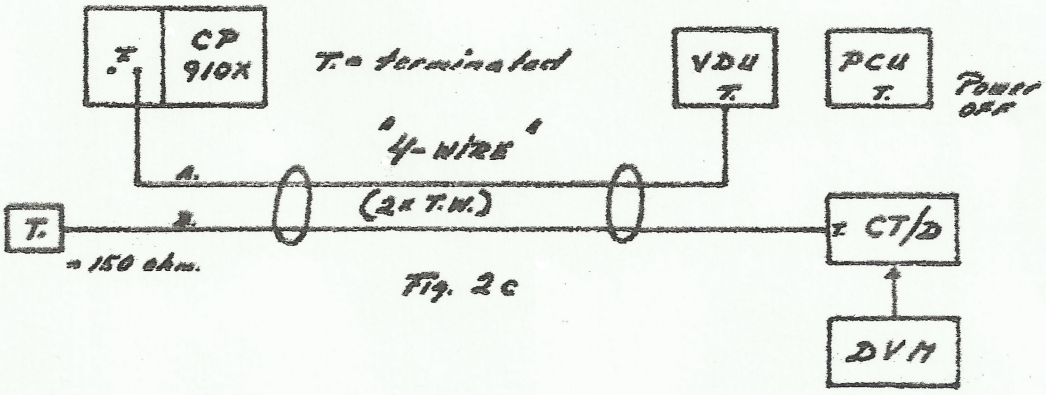


Fig. 2c