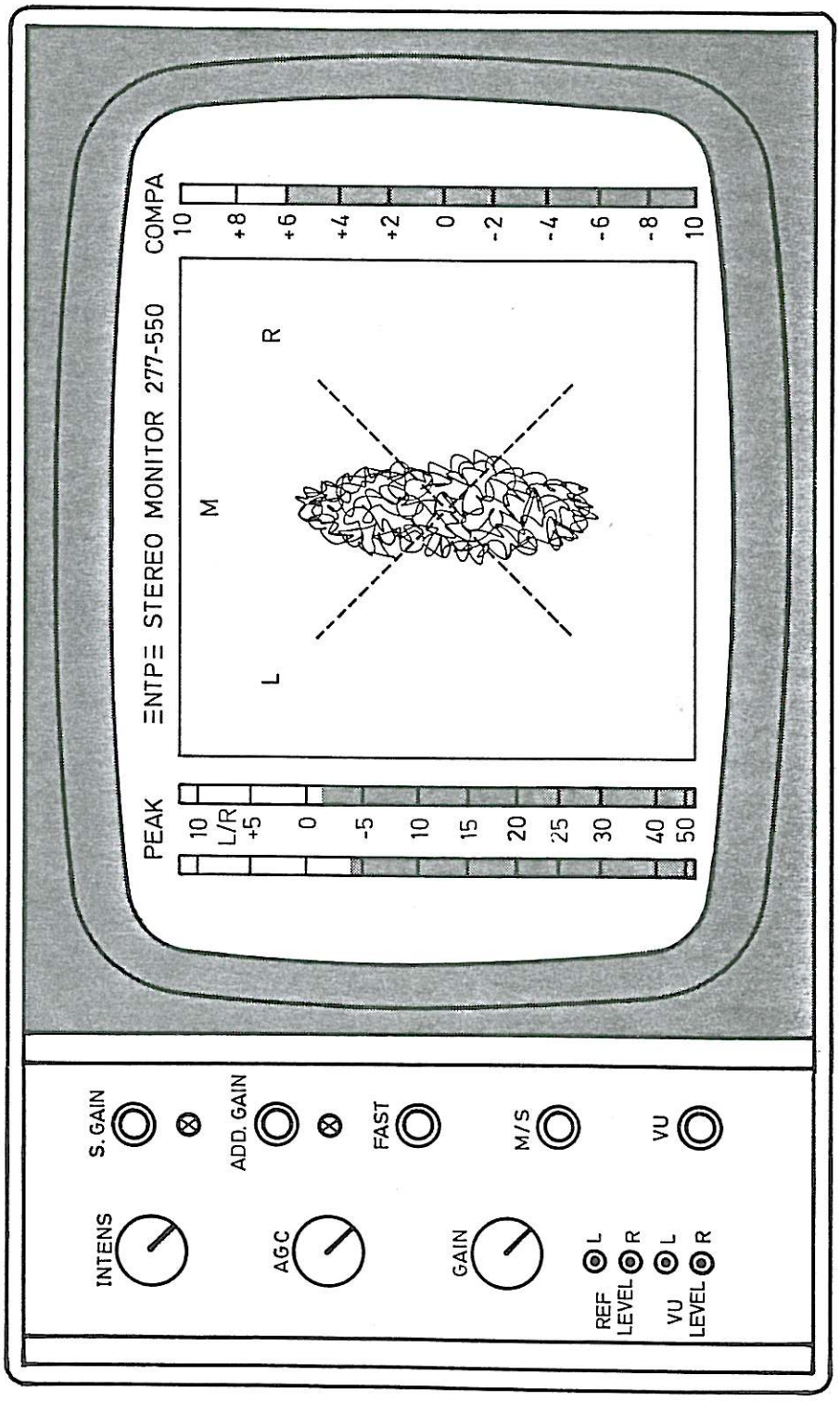
NTP ELEKTRONIK A/S

STEREO AUDIO MONITOR OSCILLOSCOPE
277-550
FRONT VIEW

277-5509-A-4



The Stereo Audio Monitor 277-550 is a complex and compact audio instrument by which it is possibility to read information of as well audio level and phase relations in a stereo signal on an internal video screen.
For the user it is a compact flexible and easy to operate instrument. The mixed-in text gives a good survey over the different functions. The instrument can further be used to drive an external colour video monitor which gives even better readability.

The picture shows to the left two meter bars which can be used as either PPMs or VU meters. For both types of outreadings both left/right signals and mono/stereo-sum/difference signals can be read out. When used as PPM it is possible to select between normal or fast integration time.

In the middle of the picture is the phase-oscilloscope. It describes in its vertical axe the mono information of the stereo signal and in its horisontal axe the stereo information of the stereo signal.

E.g. a mono compatible complex stereo signal will be displayed on the screen as a vertically oriented elliptic pattern.

To allow patterns of signals from low level signals the instrument's AGC can be coupled to increase the instrument's sensitivity. The AGC is variable with a compression ratio between 1:1 and 10:1.

The amplification in the input stage can be increased by 20dB by activating the ADD GAIN switch, thus it is possible to monitor low level signals. This function works on both the oscilloscope and the meter. The horisontal gain on the oscilloscope can as well be increased by 20dB. This is carried out by activating the S-GAIN switch.

The feature makes it possible e.g. to adjust very precisely the azimuth of taperecorders.

To the right of the screen is a compatibility meter. This shows the phase relations between the right and the left signal.
This meter is constructed as a vertical bar with base in the centre. If the two signals are in phase the outreadings will be between 0 and +10. If they are out of phase the outreadings will be between 0 and -10.
The factory sensitivity adjustment is normally 1.55V (+6dBm) for 0dB outreading on the PPM and oscilloscope. Anyhow it is possible to adjust the instrument's sensitivity to be between 0 and +15dBm. This is carried out by use of the slot potentiometers REF LEVEL L/R on the front.

The factory adjustment of the VU sensitivity is normally -4dB (which is 10dB more sensitivity than the normal PPM sensitivity). The VU meter sensitivity can as well be adjusted between 0 and 15dB relative to the reference level of the PPM. This is carried out as well by slot potentiometers on the front.

Survey of the Control Panel Functions:

INTENS	Light intensity on screen
AGC	Compression ratio on phase oscilloscope ranging between 1:1 and 10:1
GAIN	Gain on phase oscilloscope
S-GAIN	10 times increase of horisontal gain ph.osc.
* ADD GAIN	10 times increase of input gain
* FAST	PPM change to fast integration time
* M/S	PPM/VU meters display mono/stereo signal instead of left/right
* VU	Meters display VU level instead of peak
REF LEVEL L/R	Input reference level adjustment
VU LEVEL L/R	Relative VU level adjustment

* All pushbutton functions can be controlled externally, when they are not pushed in.

External Connections:
All connections except for the mains connection go through a 25-pole D-connector, male, on the rear of the unit. See drawing "Terminal Connections" 277-5502-A-4.

Note: A sufficient DC power supply input overrides an AC power supply unit.

The AC mains connection includes a fuse and a mains switch.

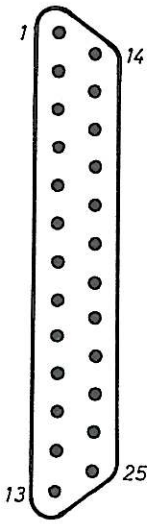
On an external colour monitor the active elements, bars, oscilloscope and text appear green.
Overload and phase in compatibility will appear red.
The background colour will appear yellow-brown.

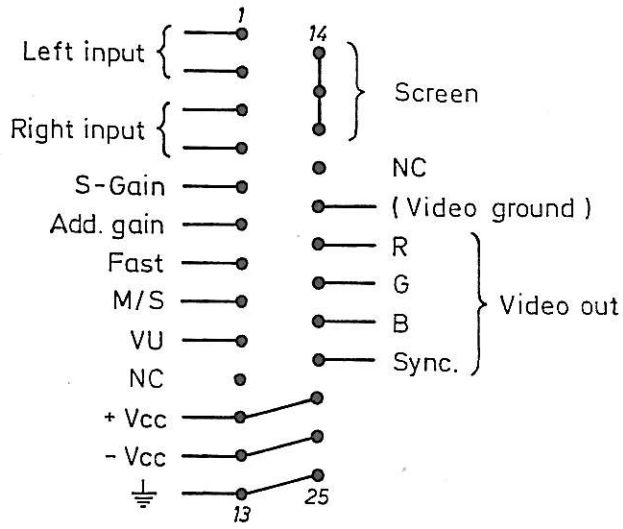
The PPM scale is normally DIN standard with 10dB overload range.

NTP ELEKTRONIK A/S

Stereo Monitor 277-550
Terminals and interconnections

277-5502-A-4





25 pin D-connector , male

24.6.87. PLJ/tl

GENERAL SPECIFICATIONS

Supply voltage	DC	:	20-55V DC
	AC	:	115/230V +/-10%
Power consumption		:	15-20W
Temperature range		:	0-40C

INPUT

Frequency range 0.5dB point		:	20Hz to 20kHz
High frequency roll-off PPM		:	fig. 1
Input impedance		:	10k Ohm +/-10% balanced, floating
Input CMRR		:	>60dB at 15kHz
Input reference level			
	PPM and Osc.	:	1.55V rms sine (+6dBu)
	VU	:	-10dB relative to PPM

Reference level is front adjustable in the range from 0.775V to 4.4V (0 to +15 dBu).
VU level is front adjustable in the range from -10 to 0 dB relative to reference level.

Input overload level	:	+15dB beyond ref. level, max. +26dBu
Additional gain	:	20dB +/-0.5dB

MEASURING ERRORS, PPM	at	+10 to -10dB	-10 to -40dB
1kHz steady signal	:	+/-0.5dB	+/-1dB
Within full frequency range	:	+0.5/-1dB	+/-1dB
Polarity shift of unsymmetrical wave	:	+/-0.5dB	+/-1dB
Tracking between channels	:	+/-0.5dB	+/-1dB

MEASURING ERRORS, VU	at	+3 to -10dB	-10 to -20dB
1kHz steady signal	:	+/-0.3dB	+/-1dB
Within full frequency range	:	+0.5/-1dB	+/-1dB
Polarity shift of unsymmetrical wave	:	+/-0.5dB	+/-1dB
Tracking between channels	:	+/-0.5dB	+/-1dB

INTEGRATION & FALL-BACK TIME, PPM

Integration time "norm"	:	10msec for -1dB +/-0.5dB 5msec for -2dB +/-1dB 3msec for -4dB +/-1dB 0.4msec for-15dB +/-2dB
Integrationtime "fast"	:	100usec for -2dB +/-0.5dB
Fall-back time	:	1.5sec for 0 to -20dB

VU METER

Time constant	:	300 msec

COMPATIBILITY METER

Input level range	:	fig. 2
Phase range	:	0^{o} to 180^{o}
Indication:		
No signal on both inputs	:	"0"
No signal on one input	:	"0"
Random phase signals on both inputs	:	"0"
In phase signals on both inputs	:	"+10"
Out of phase signals on inputs	:	"-10"
Response time	:	approx. 0.6 sec.

OSCILLOSCOPE

AGC range (relative to ref.level)	:	+15 to -20dB
Gain tracking (over AGC range)	:	+/-0.5dB
Phase error over frequency range	:	$<1^{o}$ at 0dB
Resolution X and Y direction	:	255 x 255 dots
Sampling frequency	:	625kHz
S gain	:	20dB (10 times)

VIDEO OUTPUT

RGB output level (R load = 75 ohm)	:	0 to 1V peak
Sync output (R load = 75 ohm)	:	2V peak
Frame frequency	:	50Hz
Lines	:	624

MECHANICAL DATA

Mechanical Data		
Width	:	196 mm
Height	:	117 mm
Depth	:	240 mm
Weighth		
Display size (W x H)	:	70 x 95 mm