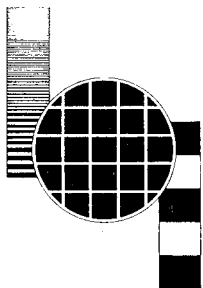


PHILIPS



UHF converter

PM5582

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GENERAL INFORMATION

1. Introduction

The PM 5582 is a high stability UHF converter, converting a complete TV-IF signal from the IF modulator PM 5580 into any TV channel between 470 MHz and 960 MHz.

The input circuit uses a directional coupler, which makes it possible to connect many converters in series. To compensate for cable loss and the insertion loss in the couplers an automatic level control circuit is used in the converters.

The converter is designed for use with the power supply unit PM 5583 in a 19" standard cabinet or together with PM 5580 which can deliver the necessary feeding voltages.

As a converter occupies 1/6 and the power supply 2/6s of a Philips standard 19" cabinet, it is possible to build up a system consisting of one power supply and four converters in a 19" cabinet.

The diagrams in this manual for the converter are valid for the B and G versions. For other versions the changes are indicated in the block diagram.

2. Technical data

Properties expressed in numerical values with stated tolerances are factory guaranteed. Numerical values without tolerances are typical values.

A. Input specifications

<u>Versions</u>	<u>Vision IF</u>	<u>Sound IF</u>
B,G	38.9 MHz	33.4 MHz
D	38.0 MHz	31.5 MHz
I	39.5 MHz	33.5 MHz
M	45.75 MHz	41.25 MHz

Input connectors	:	Two N-connectors, for looping through the IF signal via the directional coupler.
Input impedance	:	50 ohm
Input return loss	:	30 dB
Insertion loss of directional coupler	:	Less than 1 dB
Directivity of directional coupler	:	30 dB
Input range	:	100 mV _{rms} to 1 V _{rms} (20 dB)

B. Output specifications

Output connector	:	N-connector for RF output
Output impedance	:	75 ohm
Output VSWR	:	1.5 from 470 to 860 MHz 2.0 from 860 to 960 MHz
Output level	:	For any input voltage within the range, an output level of 500 mV _{rms} can be obtained.

C. Frequency range

Output frequency range	:	470 MHz to 960 MHz
Frequency change	:	The output frequency can be changed in steps of 2 MHz from 471.25 MHz to 951.25 MHz. The change is made by setting the appropriate switches determining the division ratio in the second local oscillator dividers and retuning the local oscillator and frequency doubler.

3. Accessories

- 1 Instruction manual
- 1 50 ohm N-termination
- 2 N-connectors 50 ohm
- 1 N-connector 75 ohm

Oservice Sample

OPERATING INSTRUCTIONS

4. Survey of controls and sockets

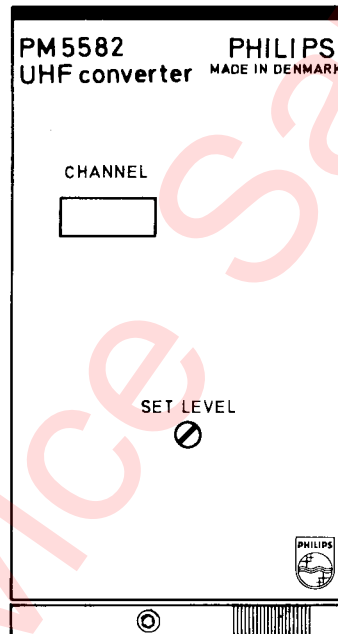


Fig. 4-1 Front of the instrument

A. Front of the instrument

"SET LEVEL"

Screwdriver controlled potentiometer, which can be used to adjust the output level.

The chosen output level will then be held constant for any input voltage within the input range.

5. Directions for use

A. Installation

Installing the RF converter in a PM 5580 TV IF modulator

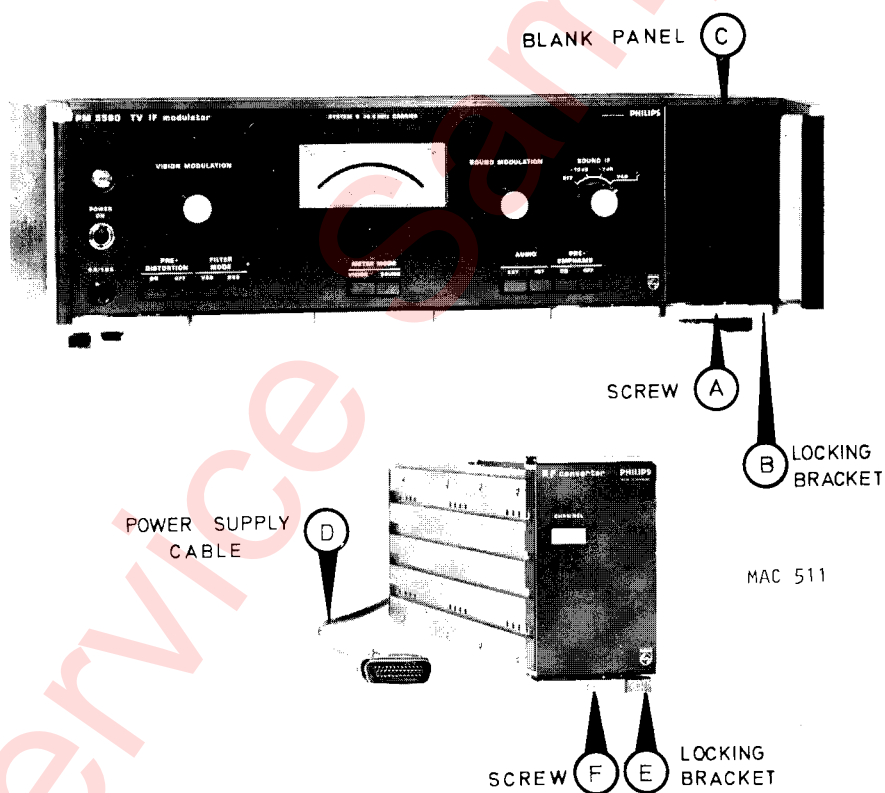


Fig. 5-1 Installing the converter

1. Loosen screw (A) .
2. Rotate locking bracket (B) until it comes fully forward.
3. Remove blank panel (C) .
4. Pass supply cable (D) through the modulator cabinet.
5. Rotate locking bracket (E) fully forward and slide the converter into the cabinet.
6. Lock the converter in place by rotating locking bracket (E) .
7. Tighten screw (F) .

SERVICE INSTRUCTIONS

6. Description of the block diagram

In the following chapters the circuitry of the units will be explained. The service adjustments, if any, will be described at the end of the chapter concerned. As very high frequencies are used, some adjustments are critical. Do not adjust filters etc. unless special reasons occur.

Please remember the following notes:

- The voltages shown in the diagram and the oscillograms published have been measured with respect to ground.
- The d.c. voltages have been measured with a PHILIPS d.c. voltmeter PM 2522.
- The oscillograms have been measured with a PHILIPS oscilloscope PM 3252.
- The oscillograms have been photographed with a STEINHEIL Oscillophot M3.
- The diagrams are provided with figures for reference: **9** in the diagram for example, refers to oscillogram no. 9. **3** in the diagram for example refers to test point no. 3 on the printed wiring board.
- The instrument must have been switched on for more than 15 minutes before the checkings and adjustments are carried out.

Note: Switch off the mains when exchanging printed circuit boards!

The block diagram is to a large extent, selfexplanatory.

The following remarks are intended as a guide to the use of the diagrams.

The unit number is indicated in the block concerned e.g. unit 1 "U1". The text within each block, e.g. "Mixer", "Sampler" etc., refers to the circuits on a particular unit. The arrows in the block diagram indicate the signal paths through the circuits and the main signal path is indicated by heavy lines.

All the inputs and outputs from the units are indicated with terminal numbers.

U1-U4,U6 and U12 are identical with the same units in the VHF converter PM 5581.

U5 is in series 01 identical with U5 in PM 5581.

The converter is available in several versions: B,G,D,I and M.

The differences between the versions are shown in the block diagram.

Input circuits

The IF signal is supplied from terminal "IF-IN" (BU2) via the directional coupler to terminal "IF-OUT" (BU1) in order to make it possible to loop the IF signal through to another converter.

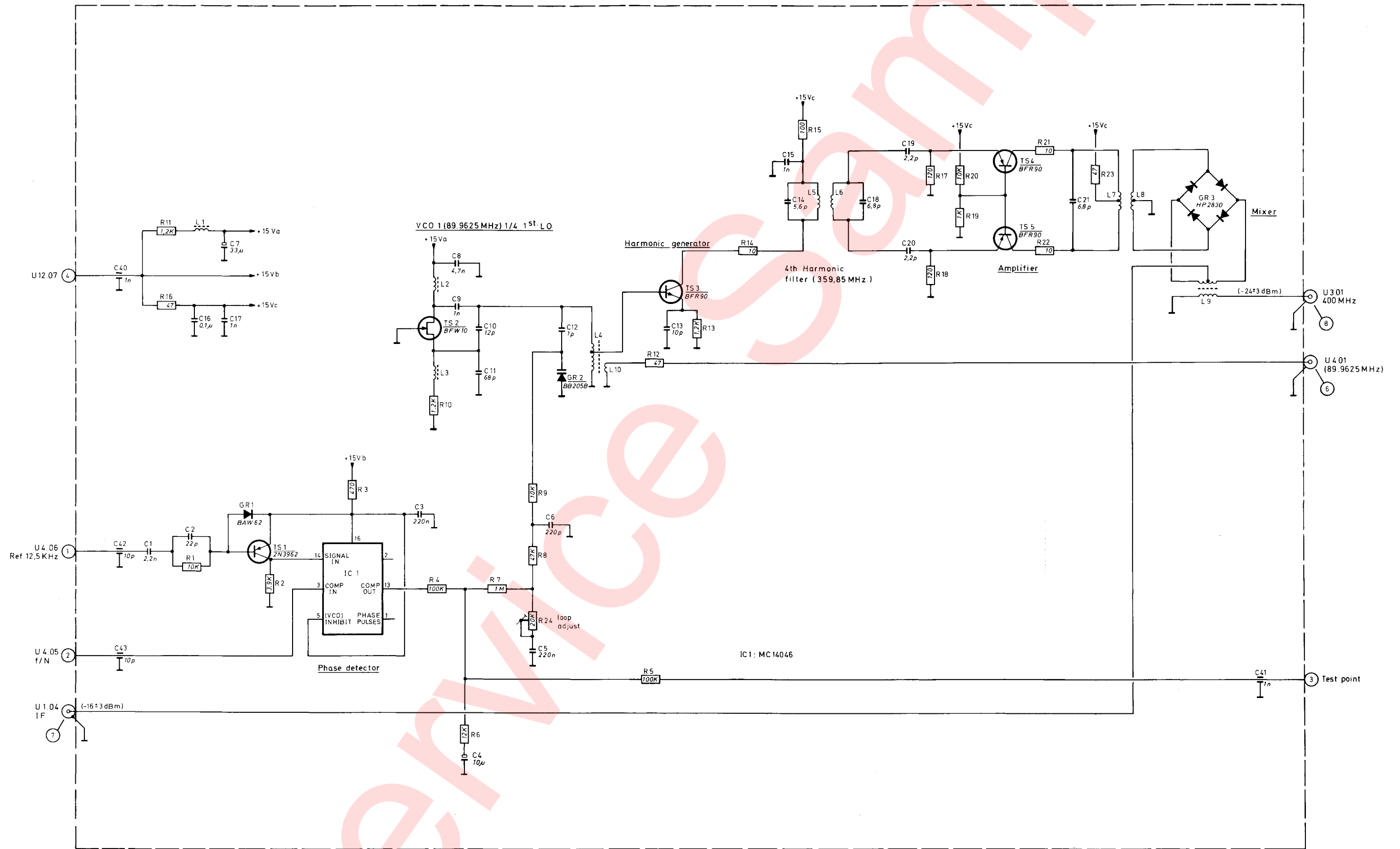


Fig. 9-4 Circuit diagram, IF to 400MHz mixer/oscillator, unit 2

18. List of mechanical parts

Item	Description	Quant	Ordering number
1.	Textplate PM 5582	1	5322 455 74068
2.	Ornamental strip 1/6	1	5322 460 64006
3.	Locking bracket	1	5322 417 64026
4.	N-Connector IF BU1-2	2	5322 266 10014
5.	Multipole socket BU3	1	5322 267 60008
6.	N-Connector RF-OUT BU4	1	5322 267 14029
7.	Power supply cable	1	5322 321 24482
	Cable assy	2	5322 321 24481

19. List of electrical parts

Unit	Print number	Ordering number	Series 01				Series 02			
			B.G	D	I	M	B.G	D	I	M
U1	4008 108 82130	5322 216 64264★	x	x	x		x	x	x	
	4008 108 82140	5322 216 64274				x				x
U2	4008 108 82180	5322 216 64265★	x	x	x	x	x	x	x	x
U3	4008 108 82200	5322 216 64266	x	x	x	x	x	x	x	x
U4	4008 108 82210	5322 216 64267★	x	x	x	x	x	x	x	x
U5	4008 108 82230	5322 216 64268	x	x	x	x				
	4008 108 83950	5322 216 64325					x	x	x	x
U6	4008 108 82240	5322 216 64269	x	x	x	x	x	x	x	x
U9	4008 108 82270	5322 218 64079	x	x	x	x				
	4008 108 84760	5322 216 64327					x	x	x	x
U10	4008 108 82280	5322 218 64081	x	x	x	x	x	x	x	x
U11	4008 108 82290	5322 218 64082	x	x	x	x	x	x	x	x
U12	4008 108 82300	5322 218 64078	x	x	x	x	x	x	x	x

★ Units in stock are aligned for B & G versions.

Realignment is necessary when ordered as a spare part for mounting in the other versions.

Resistors not listed in this chapter are standard resistors of the following types:

Carbon film, CR16, 1/16W, 5 and 10%

Carbon film, CR25, 1/8W, 5 and 10%

Carbon film, CR37, 1/4W, 5 and 10%

Semi-conductors not listed in this chapter are standard types (see list of standard semi-conductors) placed in the end of the manual.