• Display Driver

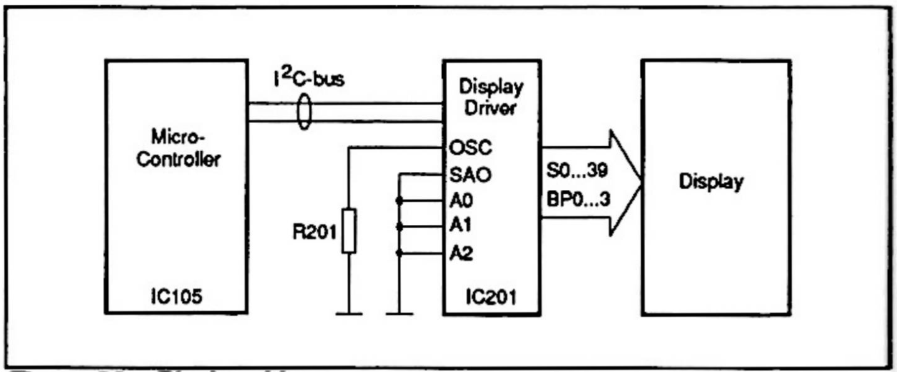

Figure 39. Display driver.

The Micro-Controller updates the display last in every measuring **cycle** by sending segment information via the I²C-bus to the display driver IC201 (the display driver address is set by pins SAO, AO, Al and AZ).

The display driver converts the information to repetitive pulse trains before feeding the display (via S0...S39 and BP0...BP3).

The display is multiplexed by a factor of 1:3 to keep the number of input pins low.

R201 sets the frequency of the internal display driver oscillator.

• Power Supply

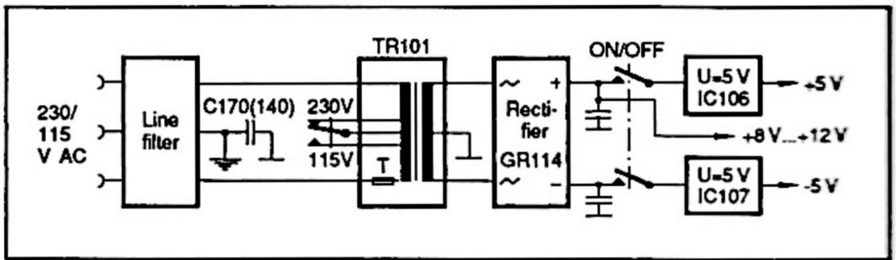

Figure 40. Power supply.

The PM 6665 and PM 6666 can be run from 115 or 230 V AC (±15%) mains supply, 46 - 440 Hz, or from built-in battery units.

The power supply generates regulated +5 V and -5 V for the logic, and unregulated +8...+12 V for the battery unit or the GPIB interface.

From the line filter the mains supply is fed to the mains selector and transformer TRI 01 which contains a built-in thermal fuse (T).

Capacitor CI 70(140) is connected between chassis and signal ground to improve signal ground to the rear panel input (EXT REF).

• *HF Input*

(option)

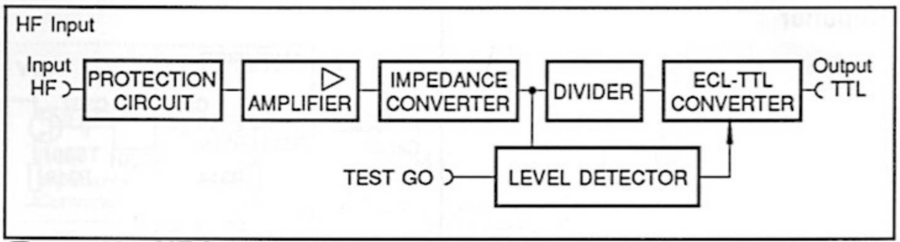

Figure 41. HF input.

The frequency range of the three types of HF Input are:

type	PM 9608	100 MHz - 1.1 GHz
	PM 9608B	70 MHz - 1.3 GHz
	PM 9615	70 MHz - 1.0 GHz

The input, which is AC coupled, has a nominal impedance of 50 ohms. The main function of the circuit is the DIVIDER which divides the frequency by 256.

The HF Input contains following sub-functions (individually described below and on the two following pages):

- PROTECTION CIRCUIT
- AMPLIFIER
- IMPEDANCE CONVERTER
- DIVIDER
- ECL-TTL CONVERTER
- LEVEL DETECTOR

Protection Circuit

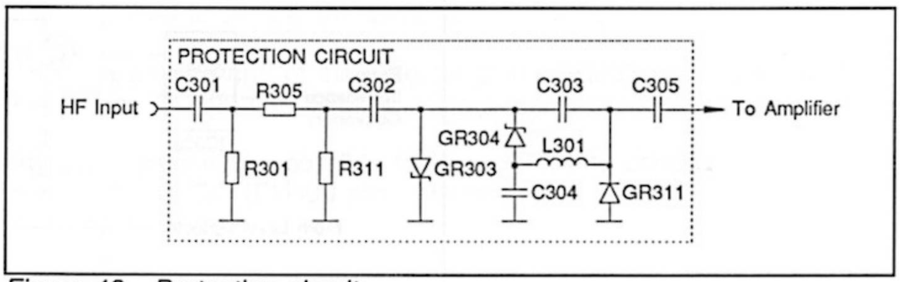

Figure 42. Protection circuit.

The HF Input is protected from excessive input levels by a resistive attenuator followed by a PIN-diode attenuator.

The resistive attenuator consists of the resistors R301, R305, and R311. The attenuation is 6 dB.

The diode attenuator consists of the components between the capaci tors C302 and C305. It works in the following way:

Capacitor C304 will become negatively charged if the input amplitude increases above the forward voltage drop of the Schottky diodes GR303 and GR304.

If the DC voltage across capacitor C304 now becomes higher than the forward voltage drop across the PIN-diode GR311 (=-0.65 V) current will flow through the diodes. This will decrease their impedance, which means that the amplitude over the diodes will be almost constant.

Amplifier

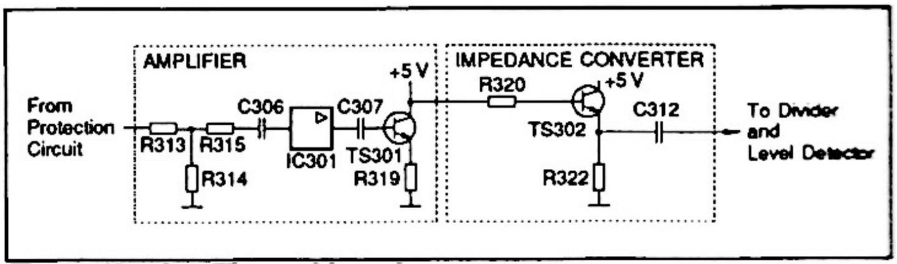

Figure 43. Amplifier and impedance converter.

An attenuator, R313...R315, reduces the signal level by 3 dB to avoto overloading of amplifier circuit IC301. The signal is amplified by about 15 dB by IC301 to compensate for the input attenuation.

TS301 amplifies by about 8 dB in the frequency range 0.9...1.3 GHz to expand the upper frequency margin for the divider circuit IC302 (after the Impedance Converter).

Impedance Converter

Transistor TS302 matches the high output impedance of the amplifier to the low input impedance of divider IC302.

Divider

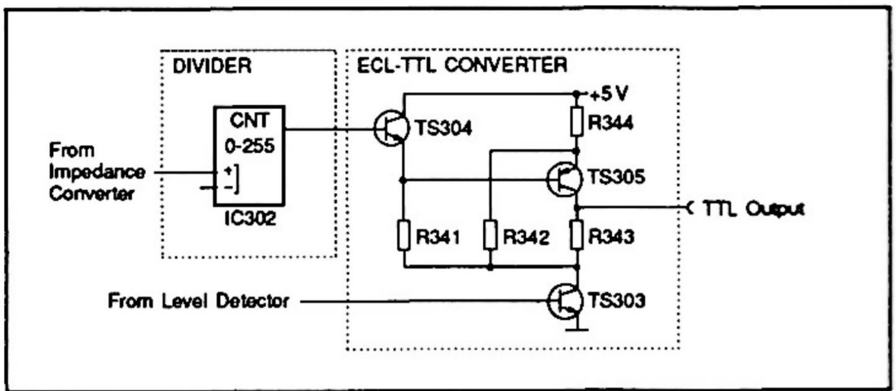

Figure 44. Divider and ECL-TTL converter.

IC302 divides the input frequency by 256, to max 5.5 MHz. This lower frequency is possible to measure by the measuring logic.

ECL-TTL Converter

The signal is converted from ECL to TTL level by the transistors TS304 and TS305 to match the measuring logic.

The conversion can be performed providing transistor TS303 is con ducting. This transistor is used as an "acceptable level" switch and 5 controlled by a level detector.