

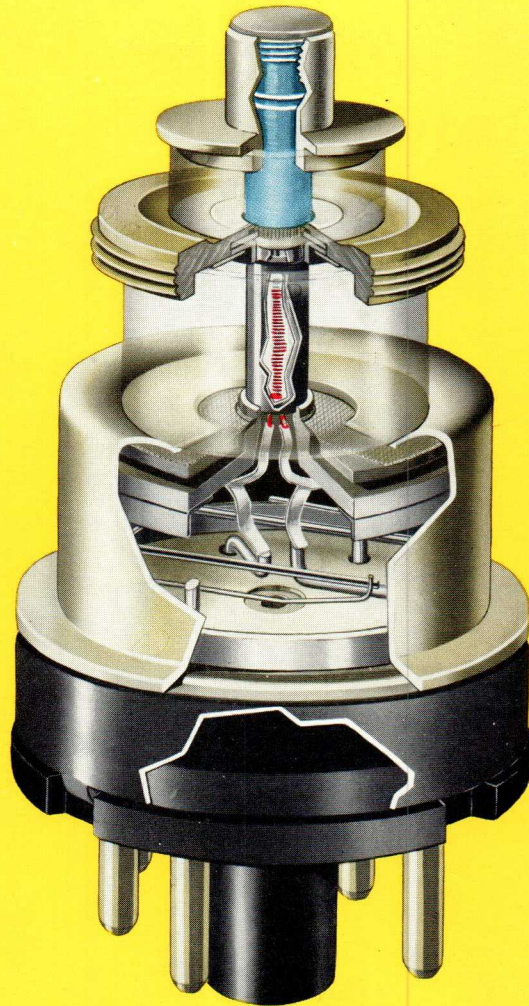
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Broad-band 4000 Mc/s amplifier unit

with the triode **EC 56**
or **EC 57**

for microwave communication links

PHILIPS ELECTRONIC MARKETS DEPARTMENT

PREFACE

Point-to-point connections for transferring intelligence (e.g. audio, video, facsimile), such as AM, FM or pulse-coded modulation, may in principle consist either of wireless connections (beam transmitters) or of line connections (cables). The choice between these two systems will as a rule be determined by the local conditions in each individual case.

For wide-band transmission the use of a beam transmitter may be preferred to a line connection, because (expensive) coaxial cables and line-amplifiers can be dispensed with.

Especially in cases where cables would have to be very long, or where their laying and maintenance would be difficult (rocky or watery areas), the beam transmitter is to be preferred to a line connection.

These arguments are valid both for multi-channel telephony and for TV link connections. Particularly in this application, which has become very up to date, the beam transmitter renders excellent and indispensable service. For semi-permanent link connections (commentaries) the beam transmitter is even the only practical solution.

For rapidly exchanging data, the beam transmitter will indubitably be appealed to, included the exchange between data-processing machines, the use of which may be expected to increase steadily.

Several types of electron tubes can be used as microwave amplifying tubes in beam transmitters. Proceeding development in the field of the short-wave technique has succeeded in manufacturing triodes, with their inherent advantages, for use on centimetric waves.

In this Bulletin a description is given of a 4000 Mc/s beam transmitter amplifier that can be equipped with the disc seal triodes EC 56 or EC 57. Due to the incorporation of a "ferrite isolator", a recent application of ferrites in microwave technique, it has been found possible to build the amplifier as a complete unit, the tuning and maintenance of which is extremely simple. As a consequence, an unlimited number of amplifiers can be connected in cascade, the EC 56 being used in the low-power stages and the EC 57 in the output stage.

Detailed information on these and additional merits of the amplifier is given in this Bulletin, whilst also the amplifier (type 88935) and the available accessoires, viz. the interstage isolator (type 88936/00 and the antenna isolator (type 88936/02), are described. In Appendices the theoretical considerations on which the design is based, are given in full detail.

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