

May 29th, 1954
General Delivery
Wailuku, Maui
Territory of Hawaii
U. S. A.

PERFORMANCE OF MULLARD BAND PASS FILTERS

250kc nominal center frequency

| Filter number | ± 6 | ± 12 | ± 25 |
|-----------------------|-------------|-------------|-------------|
| 3DB center frequency | 251.1 | 250.8 | 250.7 |
| 3DB band width in kc. | 12.6 | 21.3 | 50.6 |
| Insertion loss in DB | 2.7 | 1.9 | 0.9 |
| 60DB/3DB ratio | 1.7 approx. | 1.6 approx. | 1.5 approx. |

Grote Reber
Grote Reber

June 1st, 1954
General Delivery
Wailuku, Maui
Territory of Hawaii
U. S. A.

Mullard Overseas Limited
Century House, Shaftesbury Ave.
London W.C.2, England

Att: Mr. R. G. J. Costello
Equipment Division

Gentlemen:

The three band pass filters arrived here recently and have been found satisfactory. The results of measurements are on the attached sheet. Everything conforms closely to the specifications of my letter of November 7th, 1953 except the 3DB band width and the ratio 60DB/3DB of the ± 12 kc filter. This bandwidth is on the narrow side of specification and causes the above ratio to be on the high side of specification.

By mismatching one end of the filter it is possible to examine the shape of the hills and valleys in the response curve. On the above filter the two outside hills are markedly lower than the three inside hills. Thus when properly terminated the net response curve has a shape rather like a hat, or with shoulders at the edges.

On the basis of the above merchandise and my letter of November 7th, 1953 and your letter of November 25th, 1953, I would like to purchase five more filters. Three are to conform to the original specifications. The remaining two are to be alike as follows.

Center frequency 250kc
3DB bandwidth ± 3 kc
Ratio of bandwidth 60DB/3DB to be as small as feasible
and not over 2.0
Spurious responses at all other frequencies to be
attenuated at least 60DB
Input and output impedances to be 10,000 ohms

Enclosed is a New York Bank check for sum of \$950 on account. Please have your engineers make further adjustments in the design of the ± 12 kc filter to correct the situation described above. Shipping instructions will follow later.

I would also like to purchase a small number of shot noise diodes. These tubes have bright filaments and operate emission limited. The larger the plate current the better. Please send literature and prices upon whatever you can supply.

Very truly yours,

Grote Reber
Grote Reber

DIRECTORS:
S. R. MULLARD, M.B.E., M.I.E.E.
W. BENINK.
S. S. ERIKS, O.B.E. (DUTCH).
AIR COMRE A. V. HARVEY, C.B.E., M.P.
A. W. WELTON, A.S.A.A.

MULLARD OVERSEAS LIMITED

CENTURY HOUSE · SHAFESBURY AVENUE · LONDON W.C.2
TELEPHONE: GERRARD 7777 CODES: 6th ED. ABC & BENTLEYS
TELEGRAMS: MULLECTRON PHONE LONDON · CABLES: MULLECTRON LONDON

Our Ref. XMT/1407/RGJC

9th September, 1954.

Dr. Grote Reber,
General Delivery Wailuku,
Maui,
Territory of Hawaii,
U.S.A.

Dear Sir,

Thank you for your letter dated 12th August, 1954.
I have placed an order on our factory for a further two
filters to be in accordance with the details in your letter.
The price will be £65 per filter as before.

I have made arrangements for all seven filters to
be crated and ready for dispatch on R.M.S. Orcades leaving
London on the 10th of November.

The equipment will be sent to your address in Tasmania.
Freight and Insurance amount to £9 total.

The details of your account are now as follows:-


| | |
|--|-----------|
| 7 special band pass filters @ £65 each | £455 0 0 |
| Freight and Insurance to Tasmania | £ 9 0 0 |
| | <hr/> |
| Cash in hand (950 dollars) | £464 0 0 |
| Balance due | £336 10 0 |
| | <hr/> |
| | £127 10 0 |

Convert at 2.80 U.S. dollars, per pound sterling
equals 357 dollars to be remitted.

I should be grateful if you would make arrangements to
remit the balance of the above draft at your earliest
convenience.

I am sure you will find these filters to your satis-
faction. Please do not hesitate to contact us on any
questions you may have on filter design or electronic equipment.

Yours faithfully,
MULLARD OVERSEAS LIMITED


R.G.J. Costello
Equipment Division

Paid draw draft on 27/9/54