



only on voice peaks. In the CW mode (quite apart from the UK licence regulations) it is recommended that the power be reduced to below 180W input, and on AM, slow scan (or FM suitably adapted) 80W input is about the limit. Due to a fall of efficiency at low power the maximum continuous carrier that the FT101E (or any similar modern 250W SSB rig) can provide without overheating is around 30W, so that in real terms this modern 250W rig can only deliver continuously one third of the power a '150W' rig of yesteryear could provide!

The figures in adverts

The object of advertising is to sell, and so with plenty of figures to choose from we can hardly blame the manufacturers for, in many cases, publicising the largest. (You may advertise your old car and state "brakes just re-aligned", but I doubt if you would add "clutch 8 years old and badly worn". It's against the law to deliberately falsify figures, but particularly as purchasers of amateur radio transmitters can be expected to be "duly qualified persons" there is no obligation on the manufacturer's part to explain them. Input power is a meaningless figure unless the efficiency of the power amplifier stage is known, and whilst good design will usually produce an efficiency of at least 50% there is no guarantee that this is so, if the output is not quoted. (The biggest and fastest cars usually consume the most petrol, but however deep your pocket I doubt if you would choose brand Y simply because it used more petrol than brand X). When reading any type of specification the old legal maxim "let the buyer beware" is good advice. And so with this in mind let us have a look at a few figures quoted by makers and

retailers in advertisements in US and UK publications (no names but if the cap fits...!!!).

Solid state linear amplifier "200W PEP"

No qualification of the figures is given, hence we presume that this is SSB PEP DC input rating. It's solid state so efficiency is probably around 45-55%; hence we guess the PEP output power at 100W, but the amplifier would probably have to be run at much reduced power on AM or FM to avoid overheating.

Another unit labelled "100W solid state linear amplifier". Further reading confirms that these people are talking about output power in all modes and that unit will deliver 100W continuously in the AM or FM mode, probably more than double the power in these modes of the above "200W" amplifier!

VHF multimode transceiver labelled "15-18W output". It's a pity they didn't say whether it is a continuous carrier RMS, or only PEP on SSB, but at least they have been honest enough not to claim the unit as a 30W transceiver. On this basis probably their other ratings are unambiguous and 15-18W represents the continuous power output on FM as well as the PEP output on SSB.

Multimode transceiver labelled "15W". Reading the small print we find the statement "10W minimum output all modes" which with normal manufacturing tolerances is fair enough.

Multimode transceiver labelled "30 watts". No more information is given in the small print, but investigation confirms that the 30W referred to is the DC input power. The output power in all modes of this unit measures around 12-15W; just about the same as "15 watt" rig.

Linear amplifier, labelled

1200W. This turns out once again to be input power hence possible PEP output power could be expected to be around 600 or 700W. Just a little outside the UK licence limits, but long life and a clean signal could be expected if this unit was throttled back to the legal UK limits.

HF transceiver labelled "RF input power SSB 200W." All the transceivers I have come across have a power amplifier which takes in DC input power and puts out RF. This rig has a measured power output of around 100W and hence whilst it has claimed "RF input power" in its adverts for several years, I doubt very much if it would appreciate 200 watts of RF being squirted into any of the multitude of sockets. Perhaps no one wishes to upset the bloke at the embassy who did the transaction in his lunch hour as a favour, by changing it!

Power consumption 350W. No further comments, just a picture! Actually the RF power output measured at around 100W PEP and the maker's leaflet says 180W input power. What the advertiser is quoting is the total power consumption from the mains supply which includes such items as dial lamps, valve heaters, blower etc. You could triple the power rating of a typical transceiver by wiring in a bar from an electric fire using this principle!

Power isn't everything

I hope the above gives you some idea of the state of the art of confusion, but do remember that power is not everything. Doubling your power output will only make a half-an-S-point improvement at the receiver, and in most cases the extra cash will be much better spent on improving the antenna system, or even purchasing a better microphone.

To make valid comparisons between equipment it is, however, necessary to know the RF output power in all modes so as to ensure you are getting what you want and what you think you are paying for. It is quite possible to purchase a "200W linear" that will only run 30W output on the NBFM calling channel at 29.6MHz, or a "100W linear" that will give a full 100W output continuously — an extreme example maybe, but it does pay to ask questions and read the small print before parting with your money. ●