

- Q1. What does “duty cycle” mean?
- A1. Duty cycle is the maximum time an amplifier may transmit within a five minute interval, expressed as a percentage, to avoid overheating. Suppose a mobile amplifier is rated at 30% duty cycle. This means that it may transmit for no longer than 1.5 minutes and must remain off for not less than 3.5 minutes.
- Q2. Why do mobile amplifiers have a duty cycle rating?
- A2. This is due to the fact that mobile transceivers are limited to how long they can transmit; consequently, there is no reason to design the amplifier to exceed that time. (The size of the amplifier would be prohibitive for a mobile environment.)
- Q3. What is the purpose of the carrier operated relay?
- A3. It provides a path for the receive signal to bypass the amplifier when the transceiver is receiving. The relay is necessary when an amplifier is used with handheld and mobile transceivers or base stations.
- Q4. My duplexer is rated for lower power than my amplifier produces. Can I just install the amplifier on the antenna side of the duplexer?
- A4. No, because the repeater simultaneously receives and transmits on a single antenna. Since the amplifier only transmits, it will block the receive signal from reaching the repeater.
- Q5. Do I need a mechanical relay or a solid state relay?
- A5. The difference between them is the switching time from receive to transmit and transmit back to receive. Mechanical relays offer switching times which are satisfactory for voice communications. A solid state relay can switch over 100 times faster than its mechanical counterpart however they are limited to lower power levels. Solid state relays are most suitable for data radio systems which transmit very briefly and frequently.
- Q6. May I drive the amplifier above or below its input power specifications?
- A6. No, because driving the amplifier below spec. might cause oscillations. Driving the amplifier above specifications will over heat and damage the transistor. Operating the amplifier at the specified power level guarantees stability and proper operation of the amplifier.
- Q7. Are your amplifiers compatible with the new analog/digital systems such as the Motorola TRBO, Kenwood’s NEXEDGE, and Icom’s IDAS?

- A7. Yes. These systems modulate the carrier in a way quite similar to FM modulation so compatibility is achieved.
- Q8. The frequency range indicated on my amplifier's label is much wider than it is tuned. Why?
- A8. The label indicates the frequency range of the FCC Parts applied for during Certification. The amplifier may only be tuned to a smaller portion of the band due to practical limitations of the tuning circuitry, or the customer has specified us to tune it to a particular frequency to improve the efficiency.