Subject: Re: Class A, AB1, B, C Operation/Modes
Posted by gofar99 on Thu, 02 Mar 2023 01:45:50 GMT
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Hi, Indeed. The way I get around this in all my gear, both commercial and diy is to isolate the signal ground from the chassis. I always use the third wire (AC mains ground) and attach it securely to the chassis. The internal circuitry ground is connected to the chassis via a type X2 capacitor and parallel resistor. (some folks prefer a diode bridge) There can be no other connections between the two grounds. This is important. Beware of chassis mounted jacks as they can defeat the protection. What this does is prevent ground loops through the AC mains but allows the chassis to still protect the users. A side benefit is the chassis still can act as an EMI shield for the internal components. This arrangement complies with electrical standards and makes for a quiet piece of gear no matter what it is connected to. Any faults in the circuitry are either handled by the fuse (an absolute necessity) or at least kept from harming the user. The typical component values are between 0.1 and 0.2uf and 100-150 ohms 1-2 watt size is usually fine. The capacitor needs to be AC mains rated thus the X2 designation. Usually the voltage ratings are 275 or 350 VAC. There are a few less common AC mains rated caps but the X2s are easy to source and not costly. Even though many companies used other common types in the past they are not recommended as they are not self healing and can short through. Good discussion.