

Radio Model	Transmit Mode @100W	Duty	% of time transmitting	Ah consumed per operating hour	Operating Hours with 15Ah LiFePo4	Operating Hours with 20Ah LiFePo4	Operating Hours with 30Ah LiFePo4	Operating Hours with 40Ah LiFePo4
IC7300	SSB (20% D.F.)	Light	25%	2.72	5.5	7.4	11.0	14.7
IC7300	CW (44% D.F.)	Light	25%	3.53	4.2	5.7	8.5	11.3
IC7300	FT8 (100% D.F.)	Light	25%	5.42	2.8	3.7	5.5	7.4
IC7300	SSB (20% D.F.)	Heavy	40%	3.71	4.0	5.4	8.1	10.8
IC7300	CW (44% D.F.)	Heavy	40%	5.00	3.0	4.0	6.0	8.0
IC7300	FT8 (100% D.F.)	Heavy	40%	8.03	1.9	2.5	3.7	5.0
FT-991A	SSB (20% D.F.)	Light	25%	3.61	4.2	5.5	8.3	11.1
FT-991A	CW (44% D.F.)	Light	25%	4.42	3.4	4.5	6.8	9.0
FT-991A	FT8 (100% D.F.)	Light	25%	6.33	2.4	3.2	4.7	6.3
FT-991A	SSB (20% D.F.)	Heavy	40%	4.63	3.2	4.3	6.5	8.6
FT-991A	CW (44% D.F.)	Heavy	40%	5.94	2.5	3.4	5.1	6.7
FT-991A	FT8 (100% D.F.)	Heavy	40%	8.98	1.7	2.2	3.3	4.5

Notes:

1. The FT991A traditional superhet receiver draws considerably more power in receive than the 7300. Given the amount of time typically spent listening, this has a noticeable impact on battery life. Transmit power levels are fairly similar.
2. Assumes NO accessory loads on battery (lights, computers, tuners, etc).
3. Includes no 'margin'. This is best case. Add your own 10% margin perhaps.
4. SSB duty factor assumes an average voice and reasonable 'compression' settings. Very fast speech, punchy tones and high compression can increase the % duty factor seen by the transmitter during transmissions and will decrease battery life slightly. Casual conversation with more pauses and lighter (better sounding) compression levels will extend battery life slightly.
5. CW duty factor of 44% assumes correct dot/space and letter/word timing ratios.
6. FT8 (or FT4 as well as FM) are 100% duty factor during transmit. Duty CYCLE assumes 50/50 cycle timing, but a percentage of time spent deciding what station to call so net duty cycle examples are 40% or 25% depending on aggressiveness of operating style.
7. In the DUTY and % of time transmitting columns, 25% reflects what I observe as a fairly busy and active operator at the park. 40% reflects a contest type of operator. I see many park operators at as little as 10% transmit time – extending battery life.
8. Most park days see operation from about 10:30AM till 2:30PM or about 4 hours or real 'on' time.
9. Assumes battery is in 'as new' condition and fully charged. May lose a moderate percentage of capacity as years go by.
10. Adding solar power during the daylight hours extends operating time considerably.
11. Battery capacity must be USEABLE capacity before voltage drops too much. Assume you can get about 90% of rated capacity out of an LiFePo4 battery from Bioenno but assume that a lead acid battery is only good for 50% of it's rated capacity before the voltage falls too low to guarantee 11.5V to the radio allowing for voltage drops in the (hopefully short) power cable, fuses and connectors.
12. Your results WILL VARY from the rough estimates above.