

BEST PRACTICES WITH POWER

Chris Sutherland



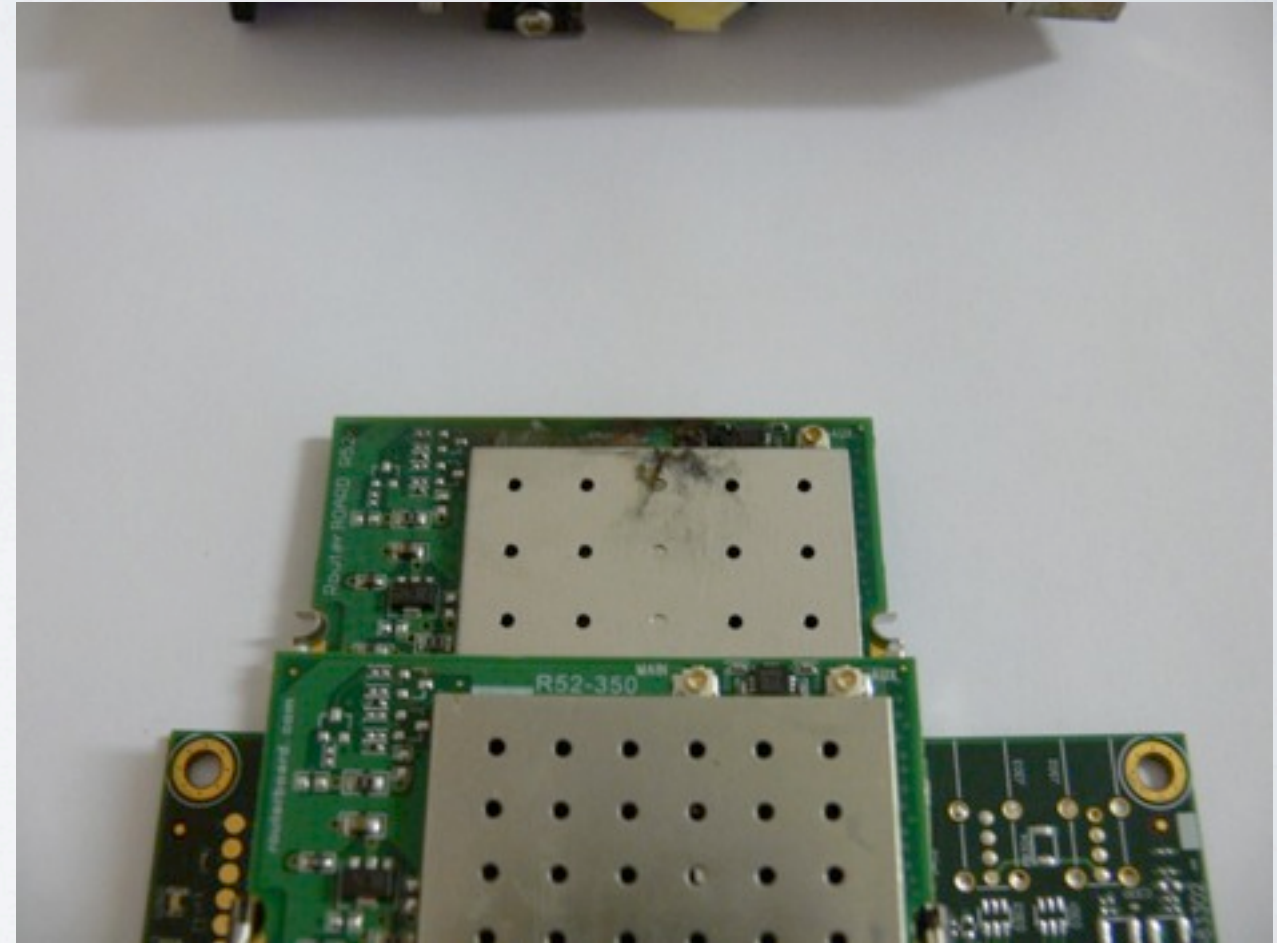
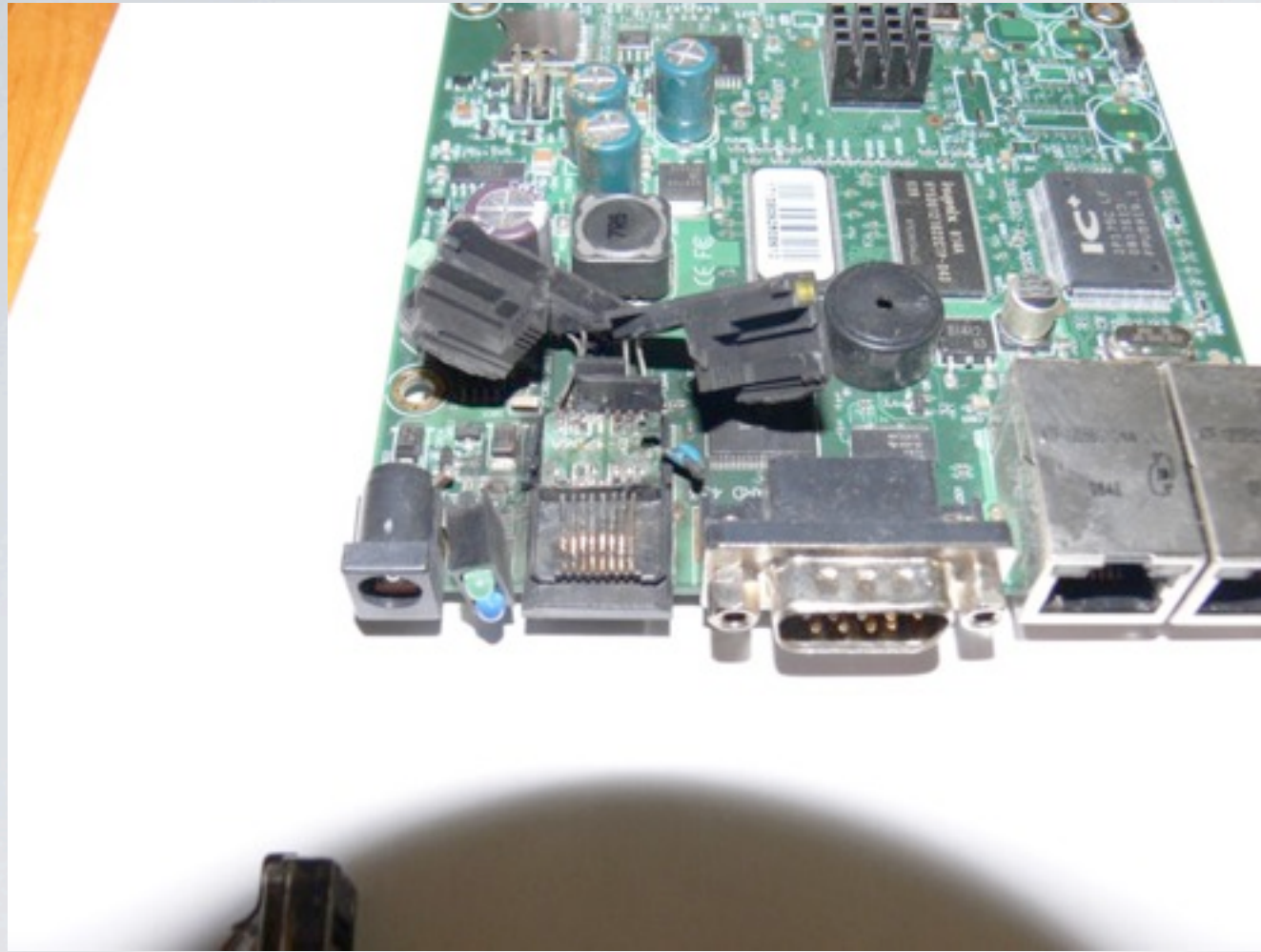
MiRO

Lightning



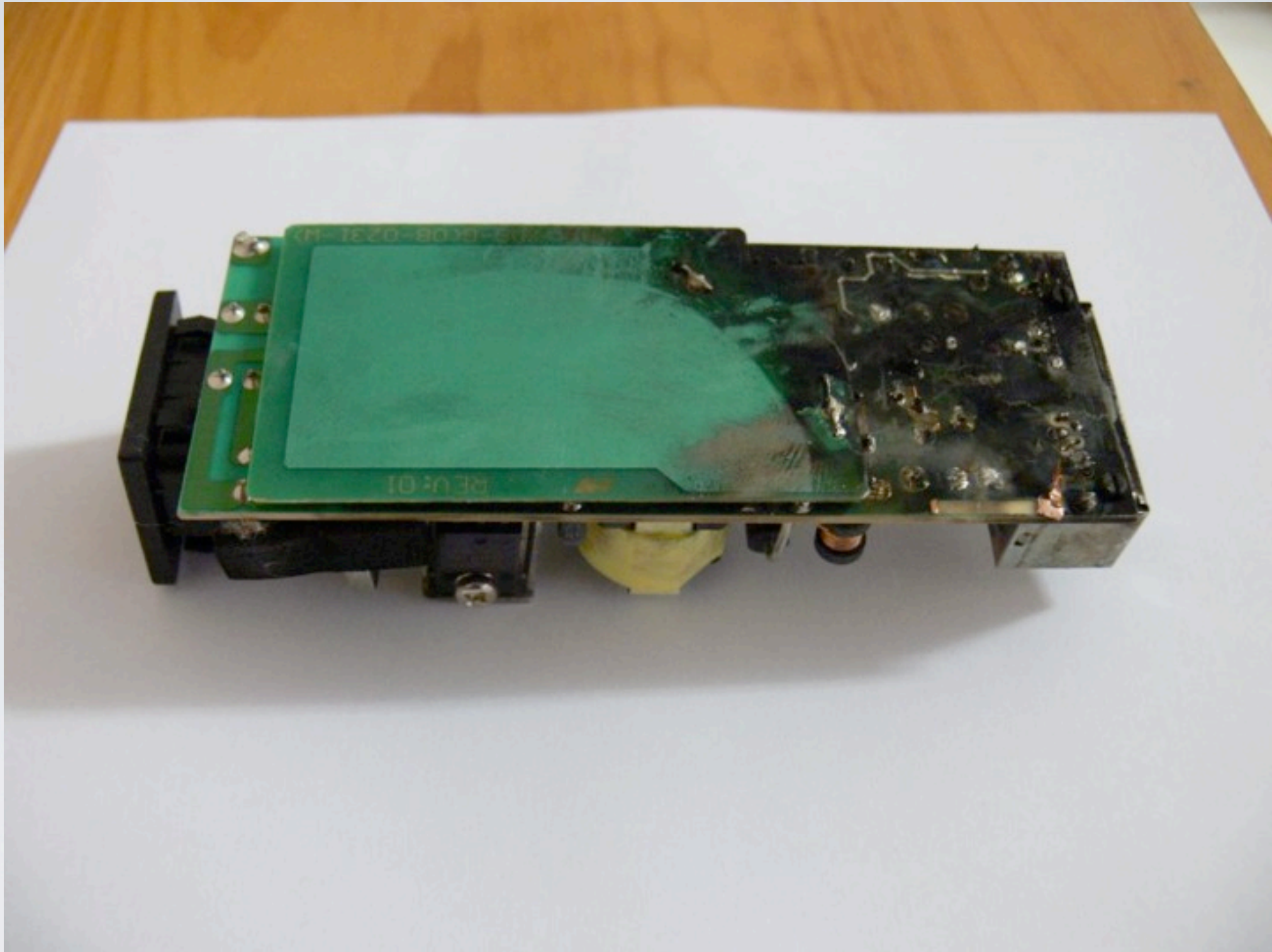
MiRO

Lightning



MiRO

Lightning

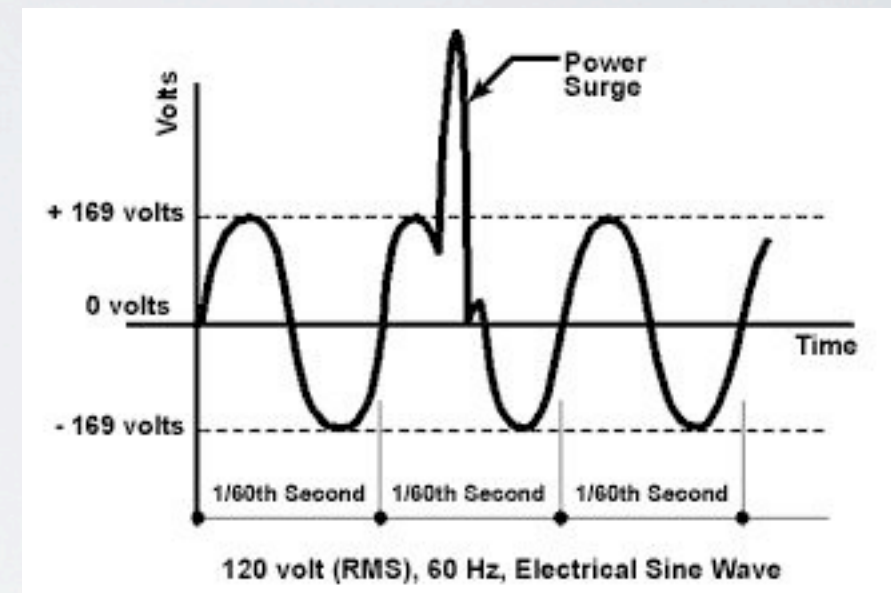


MiRO

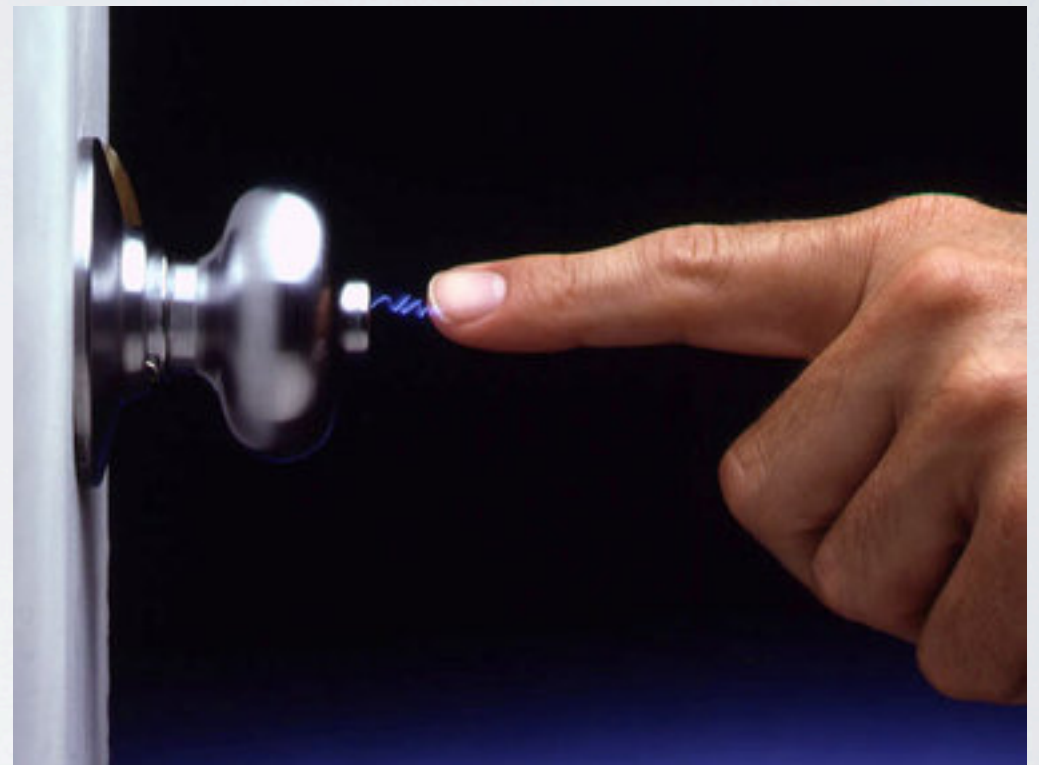
Lightning

Surge

What is it?



ESD
What is it?



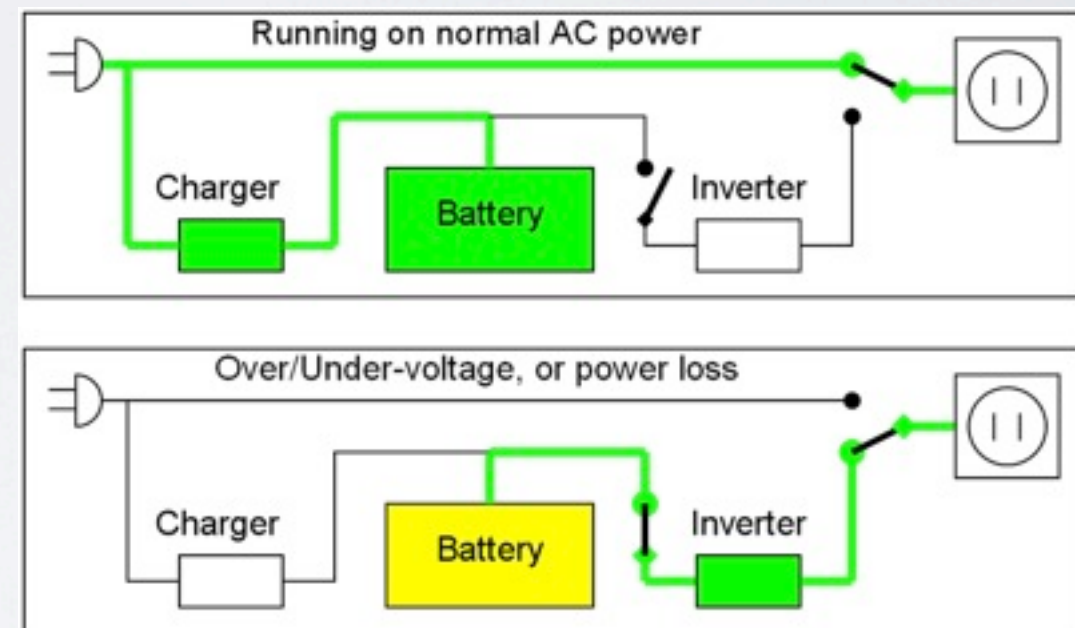


MiRO

Power Protection

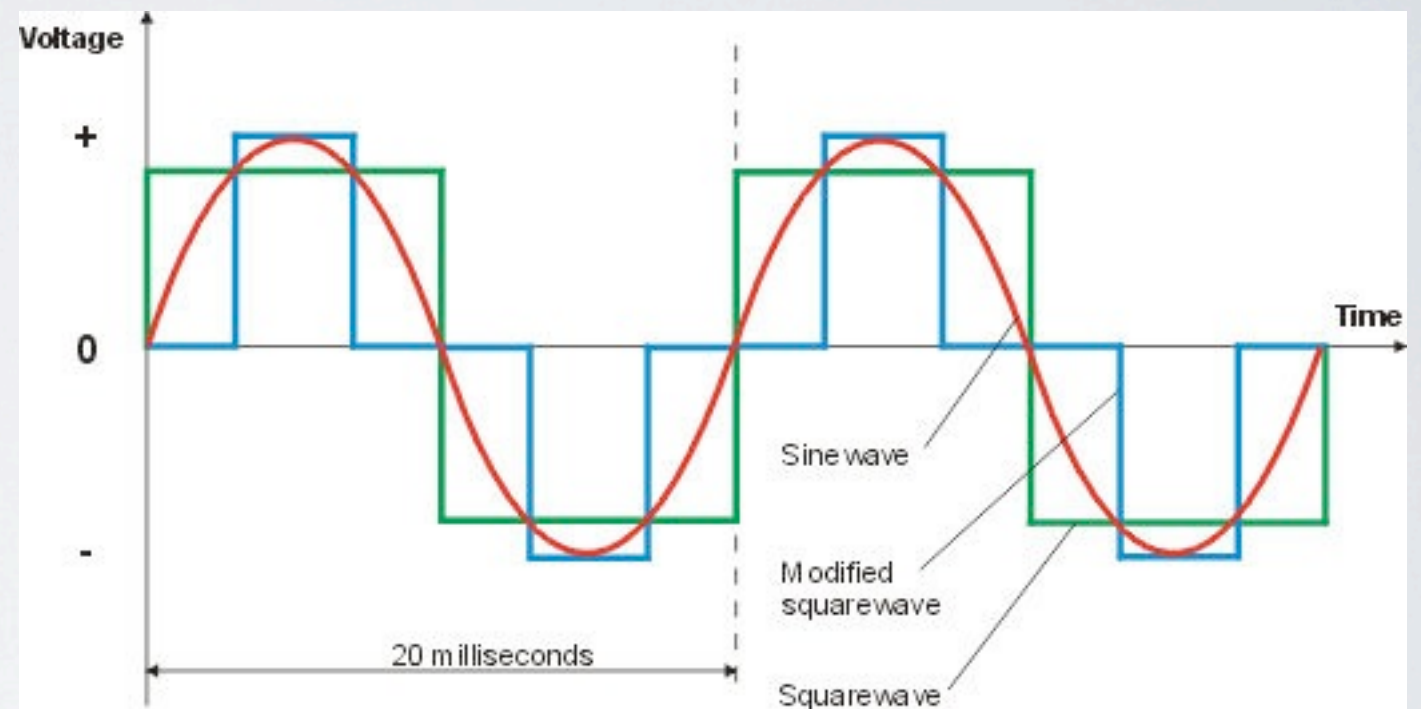
UPS

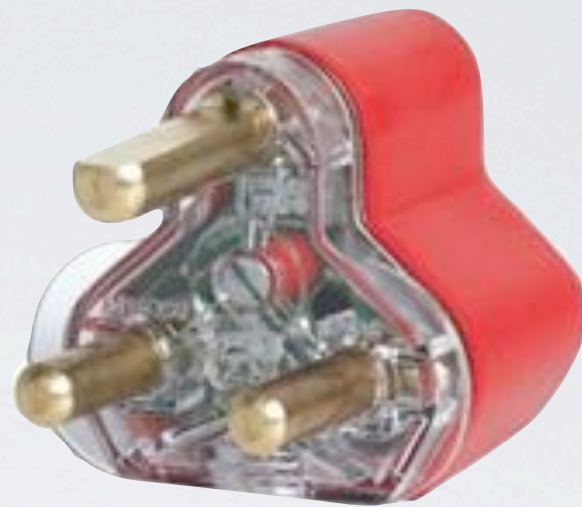
Online VS Offline



UPS

Pure/Modified SineWave





MiRO

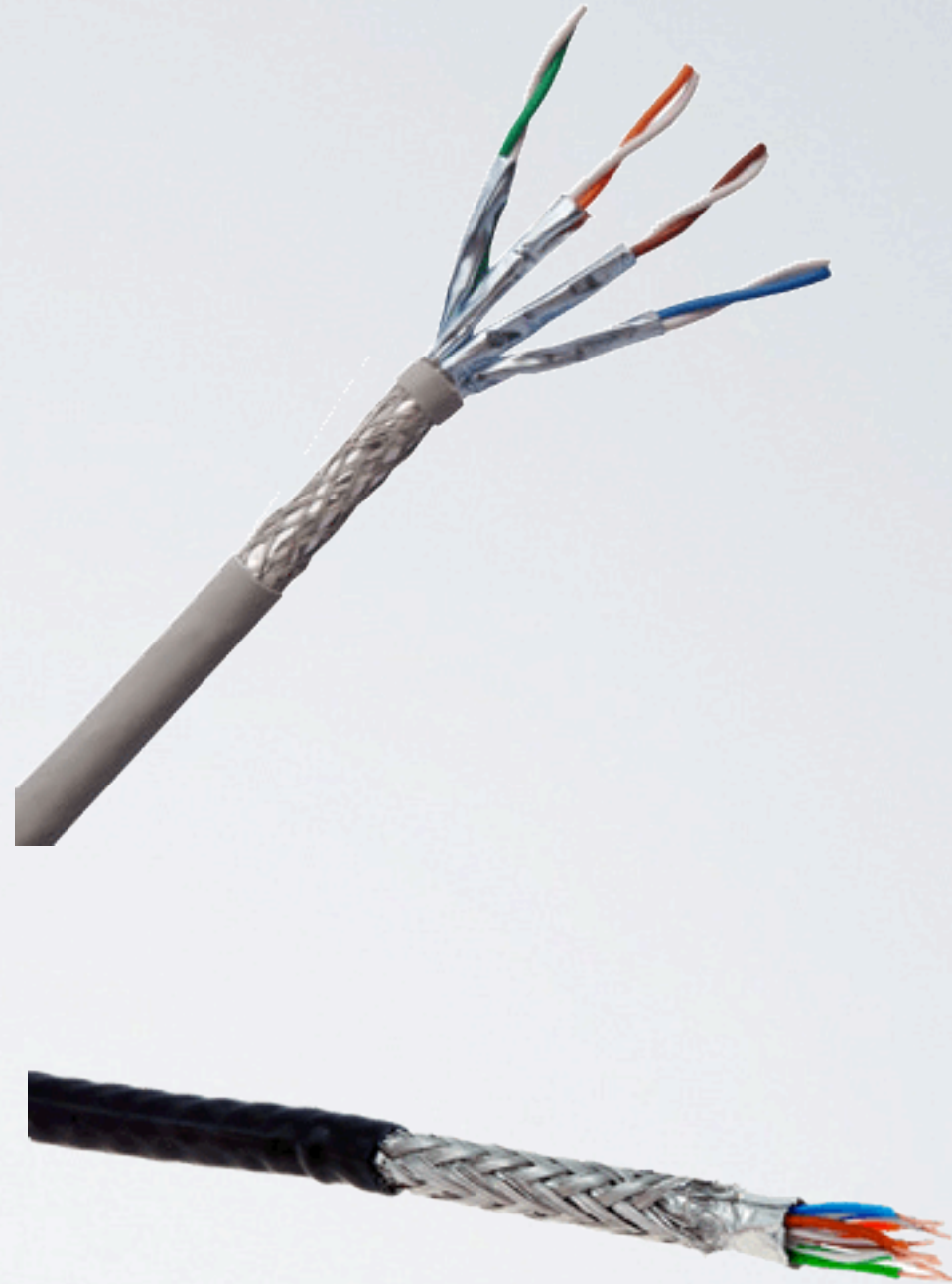
Power Protection



MiRO

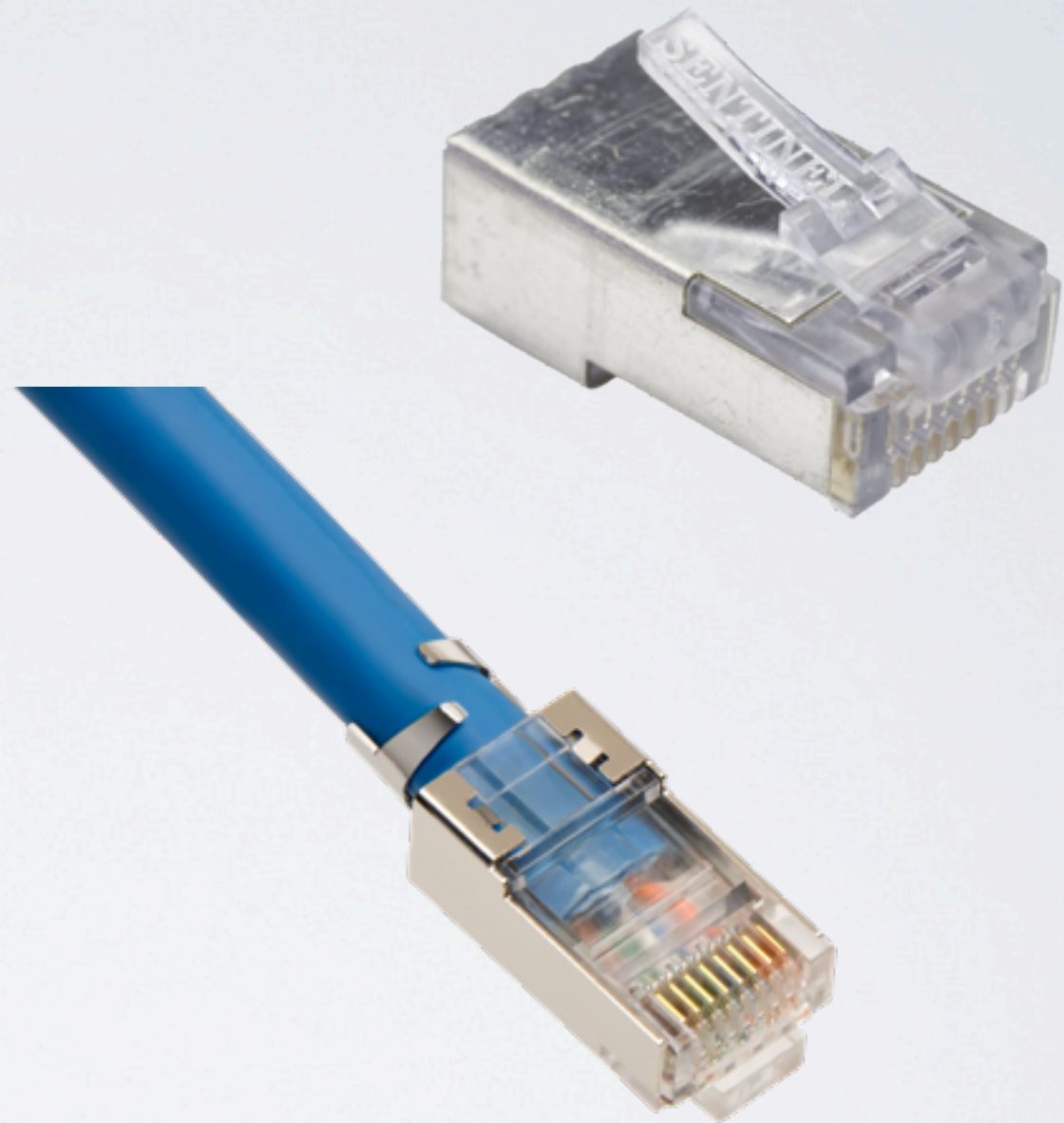
Power Protection

STP
Shielded Twisted Pair
UV Protected



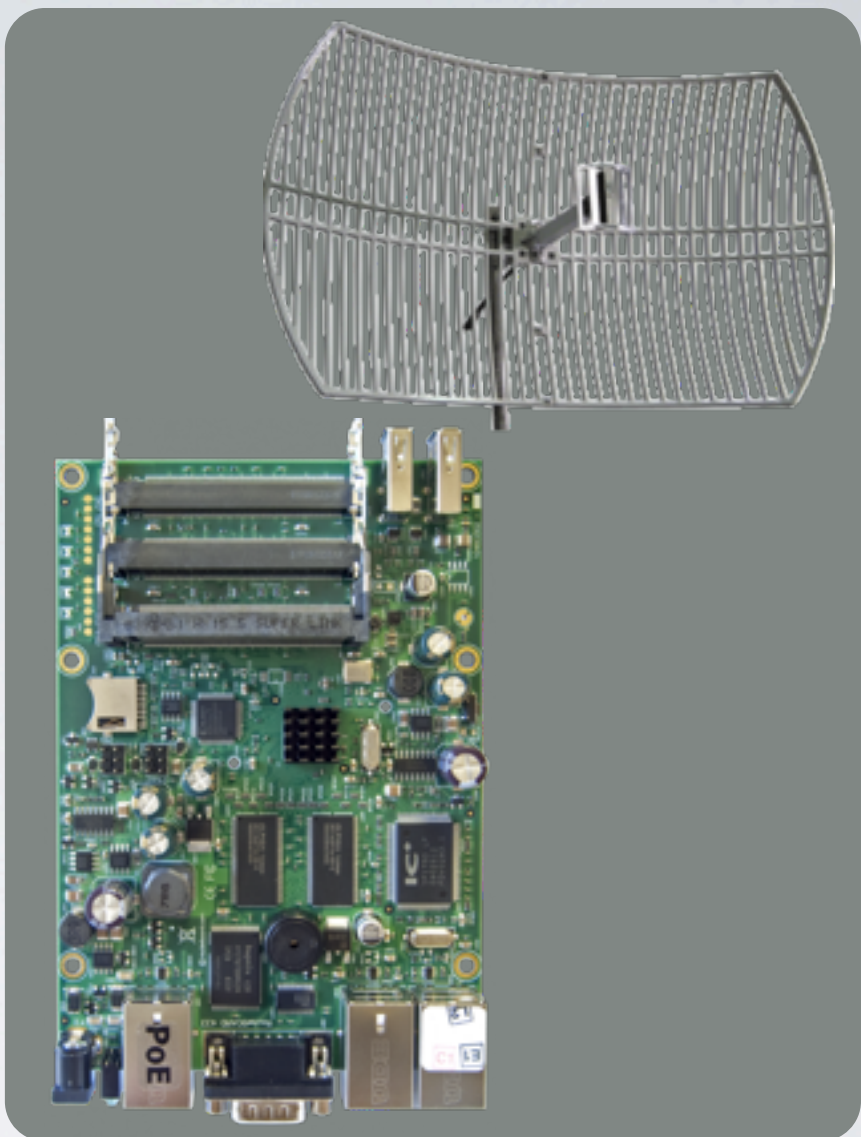
Power Protection - Cable

Shielded RJ45



MiRO

Power Protection - Cable



MiRO

Power Protection

SUPRO 60 Ethernet Surge Protector

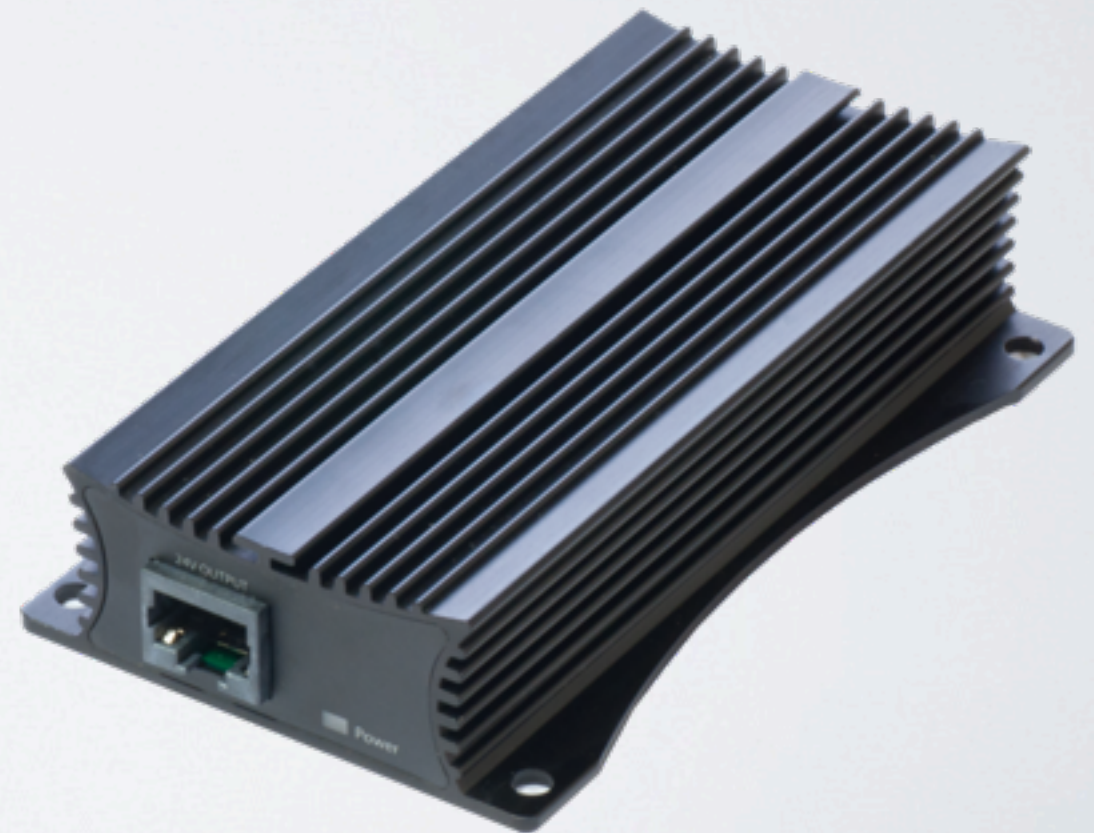




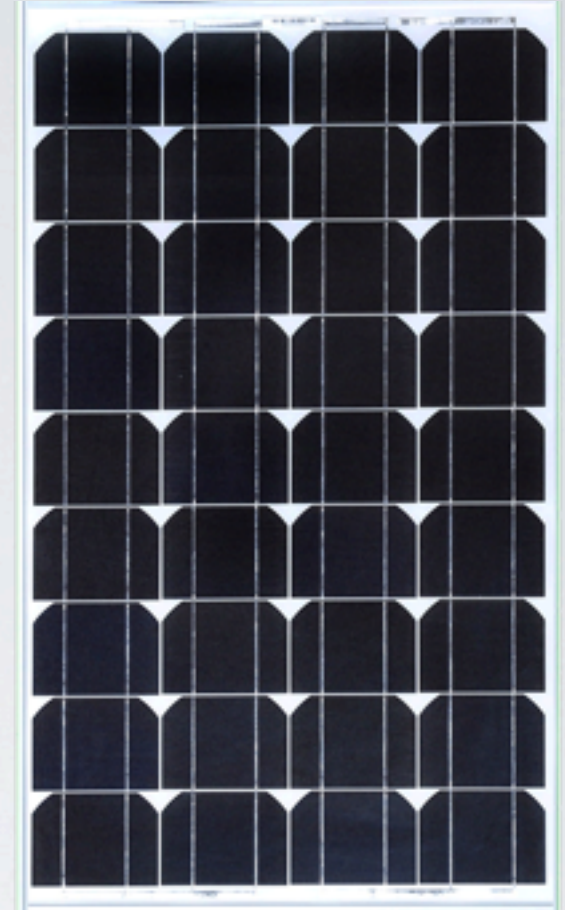
MiRO

Power Protection

Power over Ethernet
12v 24v 48v
Cable Length
Ethernet Surge Arrestors and PoE



Solar Power
Mono-crystalline
Wind Generators
Number of blades



What is the majority Voltage on
your site?

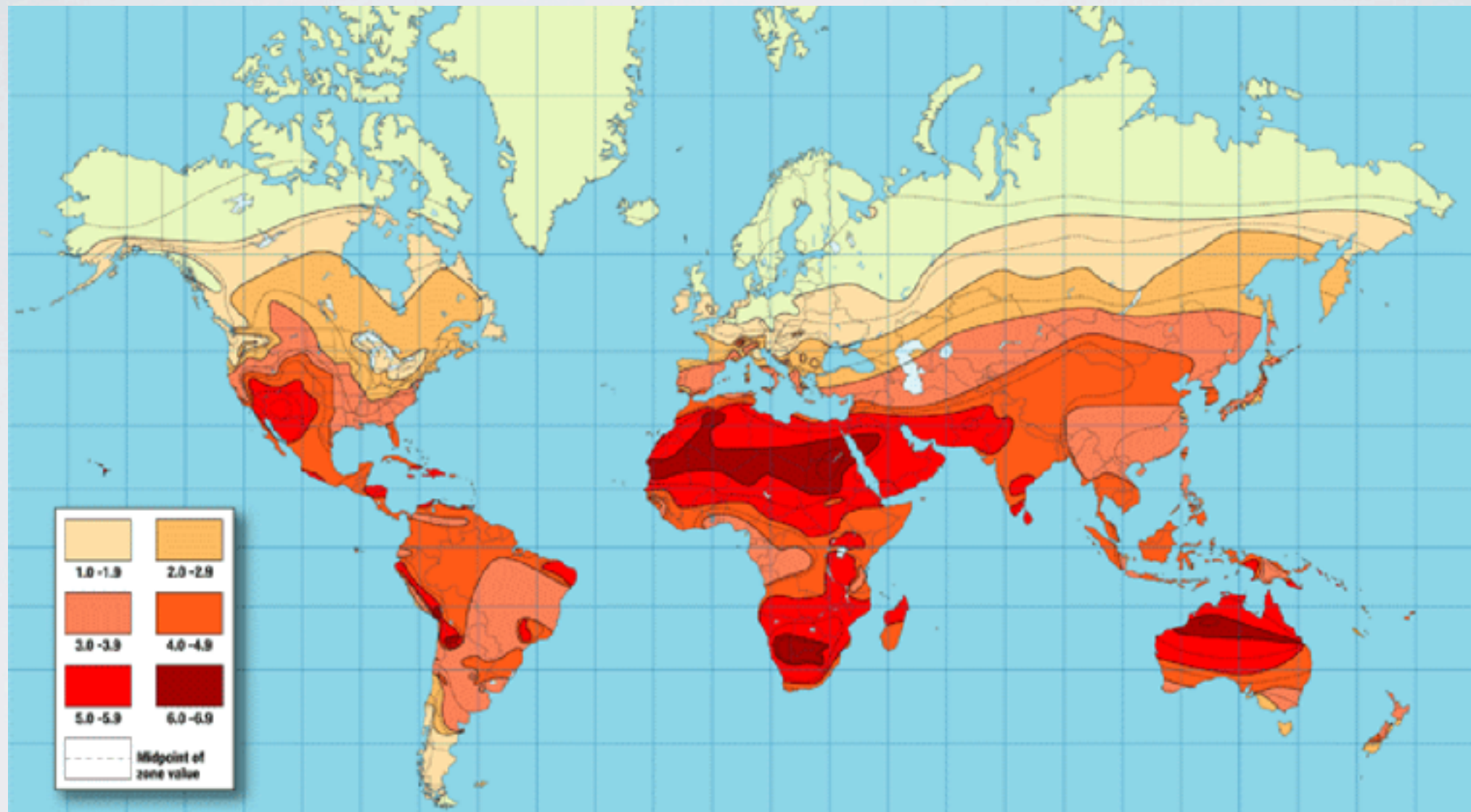
DC-DC Converters

Loss

How much are you powering and
for how long?



South Africa has +/- 5.5 hours of good Sun each day



Deep Cycle Batteries

Lead Crystal vs Lead Acid

aH - What is really available

BASIC COMPARISON BETWEEN BATTERY TECHNOLOGIES:

ITEM	LEAD ACID	GEL	LEAD CRYSTAL	LITHIUM	SUPERIOR PRODUCT
Range of working temperature	-18°C to +45°C	-18°C to +50°C	-40°C to +65°C	-20°C to +65°C	Lead crystal
Life usage	2-3 years	3-4 years	7-10 years	5-8 years	Lead crystal
Environment	Not friendly	Not friendly	Friendly	Friendly	Lead crystal lithium
Safety transportation	No good	Normal	Good	Good	Lead crystal lithium
Discharge cycle at 80%	450	500	3 100	1 000	Lead crystal lithium
Discharge ability at high current	No good	No good	Good	Normal	Lead crystal
Work ability as a battery pack	OK	OK	Good	Normal	Lead crystal
Cost – value for money	Lower	Low	Slightly more than gel midrange	Much more than gel	Lead crystal



Solar - What to consider

Solar Charge Regulators

Don't wire panels straight to
Batteries

Overcharge - Boil Chemicals

Over Discharge - No Cutoff

Panels use energy at night



Solar - What to consider

THANK YOU