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Leading Technology in Super Low Power

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Measurement equipment and wearable applications such as health monitors or navigation units are mostly portable and battery driven. Therefore the power consumption of such units is at the strong focus of development engineers. A major impact is the needed power for the Display. Today's Display technologies are already low power orientated but are still a red mark in the overall power consumption. Next to the permanently activated Display also bistable Display becomes more common. But the big disadvantages are the high response time, the limited operating temperature range and also the high current consumption in case of content change. Therefore bistable technologies such as E-Ink and cholesteric LCD (ChLCD) are for most applications not practical at all.

Technology	Power Consumption µW
Mono passive STN reflective	500
Mono TFT reflective Memory type	200
NEW mono passive STN reflective	150

By comparing a reflective Display with approx. 2.7'' diagonal with a reasonable resolution the power consumption is as following in the different technologies:

Obviously the mentioned NEW technology shows the lowest figure with 150µW. This new mono passive STN technology is based on new Ultra Low Power LCD Controllers. They combine high efficient voltage boosting and the improved drive schematic based on the known Multi Line Selection (MLS). Such ICs offers **1/10** of the power consumption then typical controllers do.

Controller	Max. Dots	Typ. Power Consumption by size
A	192 x 4	3.5 µA / 3.3V @1.5''
B	128 x 64	14 µA / 3.3V @ 1.9''
C	128 x 128	30 µA / 3.3V @ 1.9''
D	240 x 96	45 µA / 3.3V @ 2.7''

Next to the excellent low Power Consumption also full custom designed LCD Module in different sizes and resolutions are easy to realize. Additional a broad range of LCD Controllers (see table on left side) are available to fit best into customer's application requirements.

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