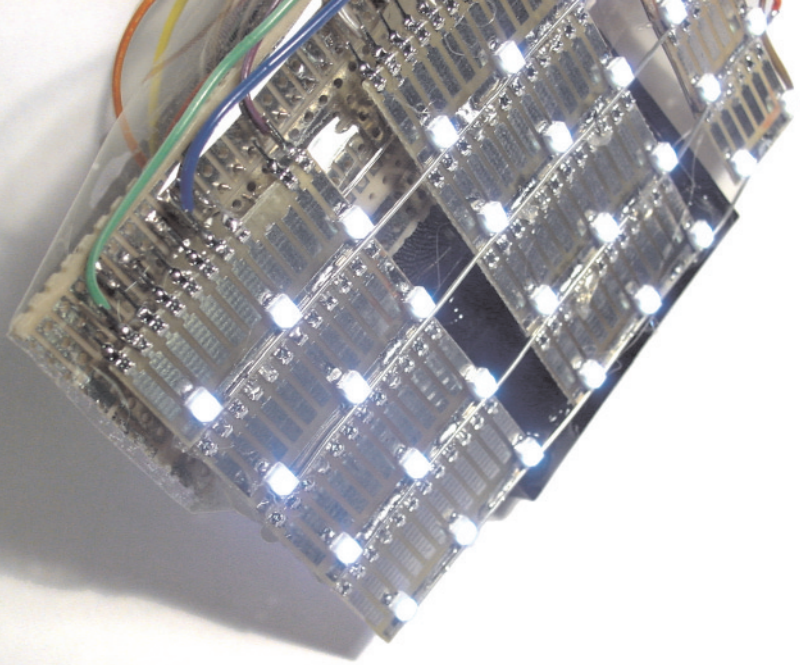


SKIN BADGE DESIGN

A project proposal for the 2003 spring consortium badges

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early prototype of
badge display circuitry

CONCEPT

The skIn badge is a powerful platform for developing new applications in person-person and person-event interaction. This design takes a huge stride beyond the Media Lab's previously successful badges (e.g., the Meme Tag (1998) and Thinking Tags (1997)). It is highly evolved in both its technological power and its aesthetics.

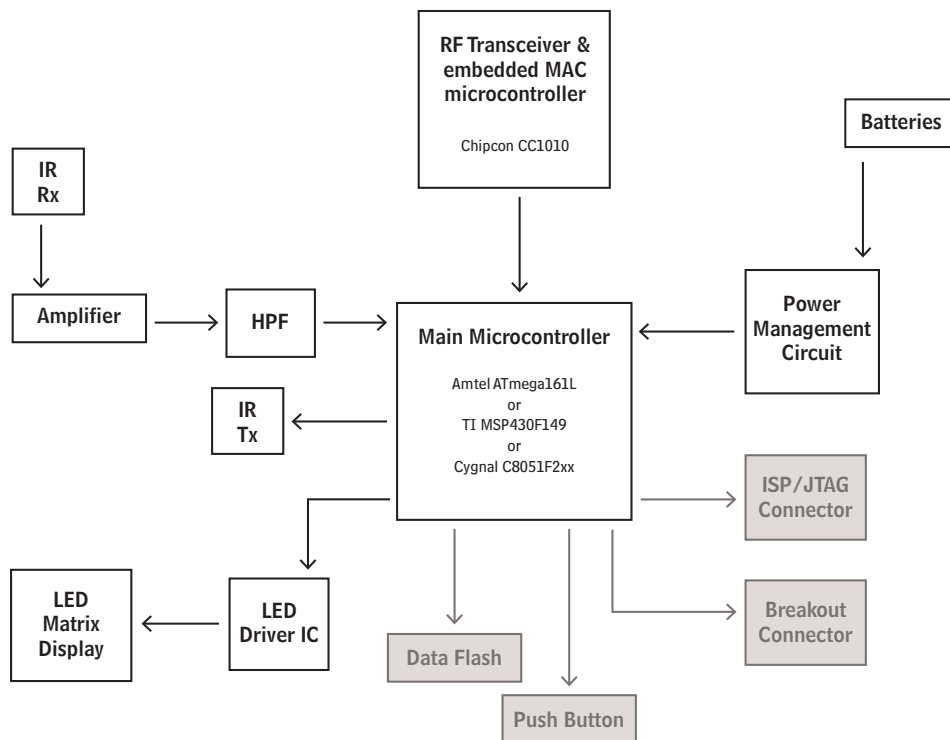
This badge is a general computing platform for experimentation with distributed systems and the analysis and enhancement of group social interaction. Although the skIn badge will be used in crowds of circa 200 people during Media Lab events, it is designed to be open and expandable for future research use, able to encompass essentially any crowd size and a host of possible applications.

Sporting both IR and RF interconnection, the skIn badge will be used to explore multihop "viral" message passing and paging, gradient-based people locators, and passive accumulation of the interest profile of the wearer.

TECHNOLOGY

The badge is equipped with multiple communication channels, a range-controllable radio transceiver for broadcast communications, and an IR channel for line of sight point-to-point communication.

The badge can be equipped with a microphone, and has enough non-volatile memory storage to log a substantial amount of activity. The badge is designed as a modular circuit that can easily be augmented with other technologies. This is to enable a wide span of research groups throughout the Media Laboratory and the sponsor community to leverage the badge in their work.



Estimated cost:

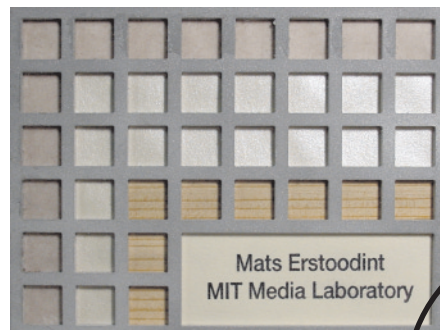
\$20-\$30	parts
\$10	circuit board
\$20-\$30	fabrication

FORM

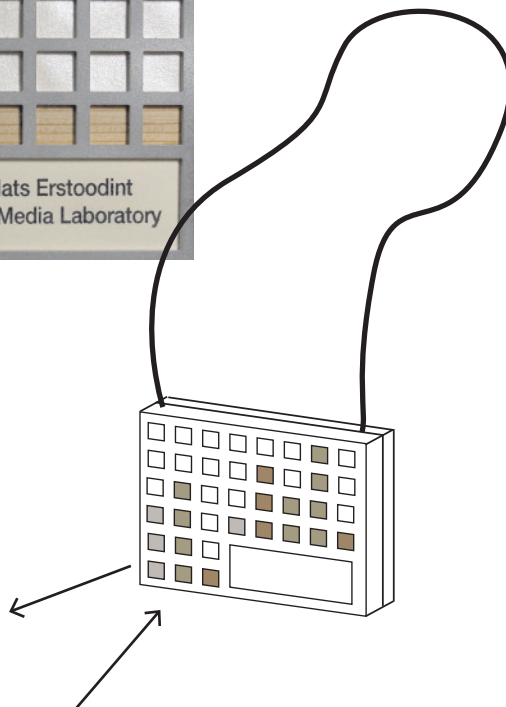
The display on the badge remains true to the form of an identity badge and can be read and understood from several meters away. Its design masks the underlying electronics of the badge so that the wearers experience focuses on the discovery of information rather than flashy technology.

The display of information is done through a low resolution matrix constructed of various textured papers backlit with LEDs and contrasted against a rigid metal frame. The paper forms a skin under the frame that diffuses light and creates a fragile and elegant grid. The display is addressed like any basic monitor, and the IR components are embedded into a cell on the front plate. The display elements can be independently addressed, allowing it to present information as bargraphs, simple alphanumerics, or other dynamic graphical structures.

A case constructed of metal or lightweight plastic encloses the remainder of the hardware and batteries.



prototype of
badge face plate



APPLICATIONS

Viral Message Passing

Infrastructureless transfer of messages that move across short range from badge-to-badge until they arrive at their destination.

Location of individuals

Active searches for individuals occurs by displaying on neighbors badges an indication of the time since they last spotted the individual, allowing seekers to follow the trail of the sought.

Analysis of social networking

Visualizations and analysis of social meetings through any number of degrees of separation.

Formation of affinity groups

Interactions between badge wearers tracks the formation of affinity groups and provides an accurate model of social clustering.

Storing of contacts for later retrieval

By pressing a button on the badge, nearby beacons (either another badge or the demo the wearer is looking at) will be specially marked for interest in the badge's accumulated data.

Wearable electronics

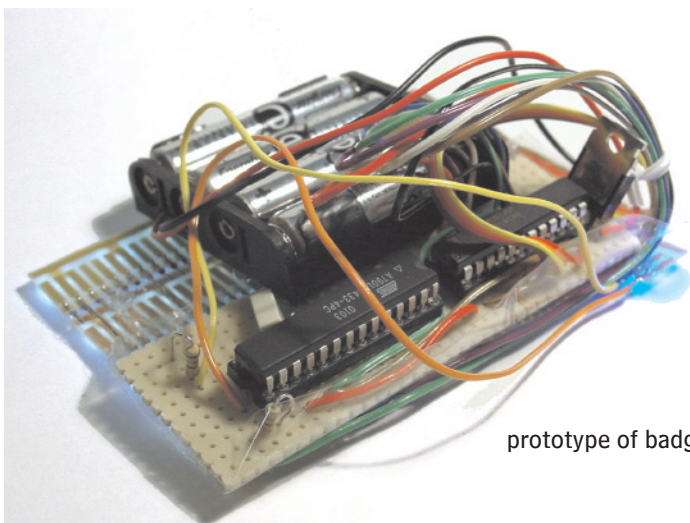
Small, powerful, portable circuit for wearable wireless applications.

Realtime display of social interactions

Visual response to details such as the length of current conversation or the rate at which participant is meeting people or seeing demos. As the wearers go through their day, the intrinsic appearance of their badge will evolve according to their activities.

Realtime information visualizations

The unique display provides an interesting and elegant platform for creating useful and innovative visualizations of behavior and search information.



prototype of badge circuitry