GB Messenger for the GBA

Operational description

GB Messenger hardware architecture is shown in Figure 1.It is based on a single-chip RF transceiver and a low cost, C8051F330 derivative Micro Controller Unit (MCU).The MCU does all of the radio setup and protocol management. All resources to do this processing including GPIO, A/D and flash program memory are resident on the MCU.The A/D is used for battery management.An external serial flash stores the unit's unique address and the message content. The transceiver CC020 output is boosted to 1-watt by using a discrete RF Power Amp (PA) EC2198 and isolation switch PE4259. An 8-bit duplex register is needed to interface the MCU because of timing constraints of the GBA bus.A separate ROM stores the GBA application that is read directly by the GBA.