

Design of RS232-powered controller for switched parasitic array antenna

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Abstract

It is often convenient to power up peripheral devices directly from the host device interface, without a need for additional and/or external power supply. In this paper we present a design of the RS232-powered controller for electronically controlling the switched parasitic array (SPA) antenna. The antenna controller passes control messages from a host device via the RS232 port, to electronically control and steer the SPA antenna beam towards desired directions. The controller sources power out of the control interface port (RS232) from the host network node. The design supports different polarities and levels of the input voltage supplied by the RS232 signal lines, data terminal ready (DTR) and request to send (RTS). The power consumption for a varying load has been measured. The measurements have shown the feasibility of powering the antenna controller via the RS232 serial port of the host device without disrupting the serial communication. The design also eliminates the need for additional and/or external power supply.