

FCC ID: I28RFID-Z4M-01

LIST MODIFICATIONS

FOR THE

R4Mplus

Thermal Transfer on demand bar code printer

MODEL NUMBER: Z4M

The ALR-9930-A¹ and ALR-9932-A OEM reader modules have undergone design changes designed to improve performance and regulatory compliance margin. The improved units are designated ALR-9930-B and ALR-9932-B. The following report describes the hardware and firmware changes involved in implementing these improvements. The hardware changes described are specific to the differences between the ALR-993x-A units based on Revision 2 hardware and the ALR-993x-B units based on Revision 4 hardware. The firmware section describes the complete history of firmware releases and provides a hardware/firmware compatibility table at the end.

Hardware Changes

- Improvement of a calibration circuit that allows the RF power output of the unit to be stabilized and controlled across a range of VDD levels extending as low as 4.8 volts. This involves the addition of bypass filtering for a reference voltage used in sensing the VDD level, as well as other component value changes to improve the performance of the calibration function. These changes improve the accuracy of the RF power output especially when used at low power supply VDD voltage.
 - Increasing the depth of modulation from approximately 12 dB to approximately 18dB to improve tag write reliability when used with antennas with high VSWR. The new version eliminates write errors observed at certain combinations of frequency and power when an antenna with high VSWR is used.
 - Increase in regulatory compliance margin by reduction of a spurious 960 MHz signal derived from a harmonic of an internal oscillator by lowering the bias voltage on the crystal oscillator.
 - Improvement of power amplifier protection circuit to eliminate risk of amplifier damage in the event of a disconnected antenna as well as the possibility of unintended triggering of the protection circuit, which can result in unwanted shut-down of the power amplifier.
 - Various minor changes designed to reduce noise and improve signal integrity through the use of power supply filtering, improved board layout and the like.
-