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Operation Detail

ANH0823 consists of 3 major building blocks, namely the application processor, cellular module and the LTE antenna.

The application processor is an ultra-low power ST Arm Cortex M4 with 1 MB of flash and 128kB of RAM. The application processor controls the audio codec for audio and the accelerometer for fall-detect capability. It all handles all visual indicators such as LED and control buttons for inputs. The application processor is clock using internal trim RC network using PLL to clock multiplication to as high as 48MHz with RTC as reference. The RTC used is a precision 32.768 kHz crystal for high accuracy.

The cellular module is a SIMCom SIM7500A LTE Cat1 which operates in Band 2, Band 4 and Band 12, 1850-1989.9MHz, 1710-2154.9MHz and 699-745.9MHz respectively. The RF transmit power is set at a nominal level of +20dBm. The RF output of the SIM7500A is launch into a triple band flex monopole antenna with antenna gain of -4dBi at Band 2, -3dBi at Band 4 and -6dBi at Band 12. The SIM7500A GPS is connected to a dual purposed high gain ceramic chip antenna for location tracking. An electronic SIM is connected to SIM7500A for carrier identification.

The entire circuit for ANH0823 fits into a 40x50mm plastic enclosure that is IP67 compliance.

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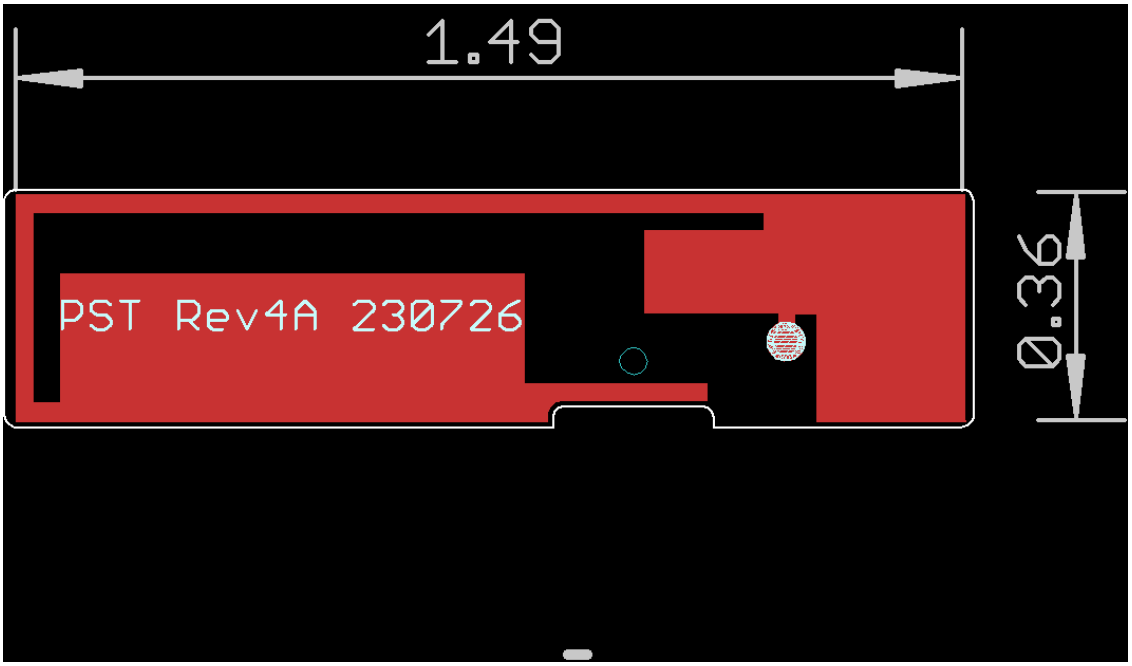
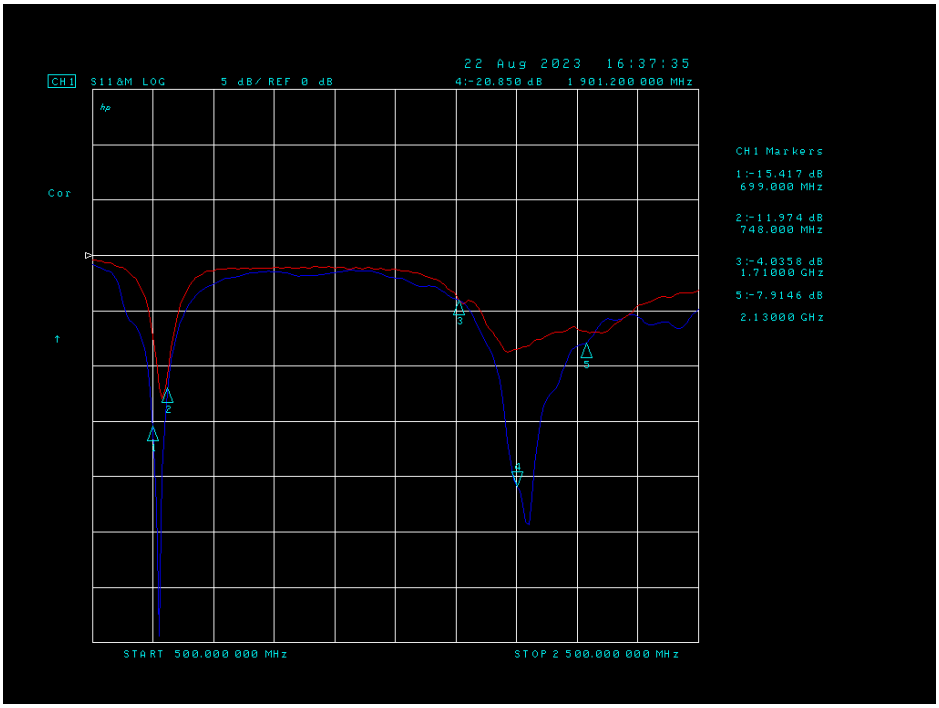
Anelto Inc Proprietary Rev 4A Flex Antenna Spec for ANH0823.

The Rev 4A antenna is a Anelto Inc proprietary flex multiband folded monopole that provides adequate antenna performance at Band 2, 4 and 12. In addition, an LC impedance matching network is provided to minimized mismatch loss at Band 4 and 12. Below is the general spec for each band

Bands	Frequency (MHz)	Nominal Ant Gain (dbi)	Nominal Return Loss (dB)
2	1850-1990	-4	20.8
4	1710-2155	-3	7.9
12	699-746	-6	15



This picture shows the Rev 4A antenna structure and dimension.



This plot shows Rev 4A antenna tuning and return loss in dB.

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