

3. Conclusion

The simulation of the actual load rate from CANoe software bus Statistics (Bus Statics) window that, used in the system bus is CAN1, so CAN2 bus the number 0 bus 1, actual load rate is 35.22%. Data transmission using extended frame, 700 frame per second send, so far has been transmitted 19872 frames. Send data frames per second can be estimated through information sending and receiving cycle per second, which sends data frame number is 710 frames. In addition to the design of baud rate is 250Kbps.

Bus message types can only be a data frame, there is no error frame, remote frame and overload frames. Among them, start of frame 1, arbitration domain 29 (extended frame format), the control domain has 6, 64 bit data domain, CRC domain 15, answering domain 2, end of frame 7, a total of 124.

The above data into the formula, bus load rate = (124 x 710) / 250000=35.216%.

	CAN 1	CAN 2
Busload [%]	35.22	0.00
Peakload [%]	35.22	0.00
Std. Data [fr/s]	0	0
Std. Data [total]	0	0
Ext. Data [fr/s]	710	0
Ext. Data [total]	19872	0
Std. Remote [fr/s]	0	0
Std. Remote [total]	0	0
Ext. Remote [fr/s]	0	0
Ext. Remote [total]	0	0
Errorframe [fr/s]	0	0
Errorframes [total]	0	0
Chip state	Active	Active

Fig.5 : Bus Statistics

The error between oretical load rate and the actual load rate is:

$$\frac{35.22\% - 35.216\%}{35.22\%} \times 100\% = 0.0114\%$$

4. Reference

- [1] Zhai Li, Gu Zhongli Zhang. Chengning, Guo Fen, Sun Fengchun.ociety. A New Communication Method Based on PLC and CAN BUS for Electric Vehicle[J]. The Seventh International Conference on Electronic Measurement and Instruments, 2005, 4: 167-169.
- [2] Fuhua Kuang, Bugong Xu. An Implementation of CANopen at Water Eletrolysis Hydrogen Generation Station. 2010 ISECS International Colloquium on Computing, Communication, Control, and Management(CCCM), 2010, pp.738-740
- [3] E.Jmanders, L.A.Barford, and G.Biswas,"An approach for fault detection and isolation in dynamic systems from distributed measurements," IEEE Transactons on instrumentation and Measurement, vol.51, No.2, 2002.
- [4] M.Ellims, S. Parker, and J. Zurlo, "Design and analysis of a robust real-time engine control network ," IEEE Micro, vol. 22, No.4,2002.
- [5] WANG Feng An emulation design and analysis of vehicle integrated information display system based on J1939 protocol[J], Modern Computer, 2007, 5(1) :20-30.