AD采样速率2.048K,数据读取时间间隔1S。振动信号要做去燥处理，带通滤波，保留5～120之间的频率；去趋势项处理。

温度信号做平均处理。4~20mA*150Ω的电压值 对应0～500℃　　　　采集到的电压范围在600mV～3000mV判断为传感器有效，控制温灯常亮。否则灭。

系统正常工作电压灯常亮，否则灭
数据传输正常数据灯闪烁，否则灭
数据传输正常数据灯闪烁，否则灭
采集IN2信号做滤波平均处理，3满刻度判断为传感器断路，振动灭。电压为0判断为断路，振动灯急促闪烁。
485的4P接口预留为外部4G模块，可以暂时不开发。
振动信号采集后，做软件积分，算出碾压速度和相对位移

接地回路

电源部分

数字电路

存储芯片

信号调理

故障指示灯

通讯接口

AD

Comment	Description	Designator	Footprint	LibRef	Quantity
1nF/2000V	1nF_NPO_10%_2KV_1210, 1nF_X5R_10%_2000V_1210	C1, C71, C87	C 1210_L	Cap	3
100pF/2000V	100PF_X5R_10%_2000V_1206	C2, C8	C 1206_L	Cap	2
1uF/25V	1uF_X5R_10%_25V_0805	C3, C4	C 0805_L	Cap	2
10uF/25V	10uF_X5R_10%_25V_1210	C5, C6	C 1210_L	Cap	2
1uF/50V	1uF_X5R_10%_50V_0805	C7, C12	C 0805_L	Cap	2
1nF/2000V	1nF_X5R_10%_2000V_1206	C9	C 1206_L	Cap	1
22uF/50V	铝电解电容*10.5	C10	CAP6.3	Cap Pol1	1
1.1uF/50V	0.1uF_X5R_10%_50V_0603, 0.1uF_X5R_10%_50V_0805, 10uF_X5R_10%_50V_0603	C11, C25, C51, C59	C 0603_L	Cap	4
10uF/50V	10uF_X5R_10%_50V_1210	C13	C 1210_L	Cap	1
3.1uF	0.1uF_X5R_10%_50V_0603, 0.1uF_X5R_10%_50V_0603, 104_X7R_10%_16V_0603	C14, C15, C16, C17, C18, C19, C20, C21, C22, C30, C31, C33, C38, C40, C53	C 0603_L	Cap	15
3.01uf/50V	0.01uF_X5R_10%_50V_0603	C23, C49	C 0603_L	Cap	2
10uF/50V	10uF_X5R_10%_50V_0603	C24, C50	C 0603_L	Cap	2
22uF/25V	22uF_X5R_20%_25V_0805	C26	C 0805_L	Cap	1
12pF	12pF_X7R_10%_16V_0603	C27, C34	C 0603_L	Cap	2
20pF	20pF_X7R_10%_16V_0603	C28, C35	C 0603_L	Cap	2
10uF/16V	10uF_X5R_10%_16V_0603	C29, C32	C 0603_L	Cap	2
100nF	100nF_X7R_10%_16V_0603	C36, C39, C84, C85, C88, C89	C 0603_L	Cap	6
104	104_X7R_10%_16V_0603	C37	C 0603_L	Cap	1
1uF/16V	1uF_X5R_10%_16V_0805	C41, C42, C48	C 0805_L	Cap	3
1.1uF/16V	0.1uF_X5R_10%_16V_0603	C45, C51, C69, C79, C91	C 0603_L	Cap	5
1uF	1uF_X5R_10%_16V_0603	C46	C 0603_L	Cap	1
22uF/16V	22uF_X5R_10%_16V_0805	C52	C 0805_L	Cap	1
1uF/16V	1UF_X7R_10%_16V_0603, 1UPF_X7R_10%_5V_0805	C57, C56	C 0603_L	Cap	2
10uF/50V	10uF_X5R_10%_50V_0805	C58, C60	C 0805_L	Cap	2
120nF/25V	12nF_X7R_10%_50V_0603	C62	C 0603_L	Cap	1
10uF/16V	10uF_X5R_10%_16V_0805, 贴片电容0805	C63, C64, C80, C81, C207, C208	0805C	Cap	6
3.1uF NC	0.1uF_X5R_10%_16V_0603	C65, C82	C 0603_L	CAP	2
100pF/50V	0.1uF_X5R_10%_50V_0603	C66	C 0603_L	Cap	1
380nF/25V	680nF_X7R_10%_25V_0603	C67	C 0603_L	Cap	1
10uF/16V	10uF_X5R_10%_16V_0805	C68, C90	C 0805_L	Cap	2
2.2uF/50V	2.2uF_NPO_10%_50V_0805	C70	C 0805_L	Cap	1
100pF/2000V	100pF_NPO_10%_2KV_1210	C72, C78, C92, C97	C 1210_L	Cap	4
1nF/50V	1nF_X7R_10%_50V_0603	C73, C74, C75, C83, C94, C95	C 0603_L	Cap	6
100nF/25V	100nF_X7R_10%_25V_0603, 100nF_X7R_10%_3V_0603	C76, C77	C 0603_L	Cap	2
10uF	10uF_X7R_10%_16V_0603	C83	C 0603_L	Cap	1
2.2uF/16V	2.2uF_X7R_10%_16V_0603	C85	C 0603_L	Cap	1
1.1uF/16V	贴片电容0603	C175	0603C	Cap	1
1uF/16V	贴片电容0805	C205, C209	0805C	Cap	2
1N4007	贴片二极管	D1	SMA	Diode 1N4007	1
SMAJ13CA	解占类贴二极管	D2	SMA	ESD_D	1
SS34	肖特基二极管 SMBDDO-214AA	D3, D4	SMB	Diode 1N4007	2
ESD7351	解占类贴二极管	D5, D6	SOD-323	ESD_D	2
5ELED	90°LED 贴光标 4PIN双 光红 型号 LPE4-5-16	D7	4LED	4ELED	1
SMAJ6.5CA	解占类贴二极管	D8, D11, D15, D17	SMA	ESD_D	4
SMAJ12CA	解占类贴二极管	D9, D16	SMA	ESD_D	2
SS16	贴片稳二极管	D10	SMA	D Zener	1
NBS21530	贴片稳二极管	D12, D13, D19, -D20	SOD-523	DIODE	4
SMAJ33CA	解占类贴二极管	D14	SMA	ESD_D	1
1N4007	二极管	D18	SMB	Diode 1N4007	1
SMAJ6.0CA	解占类贴二极管	D21	SMA	ESD_D	1
I812L050/30PR	贴片自恢复保险丝 1812 30V 0.5A	F1	FU 1812	Fuse 2	1
3C905	Jack 5xDC插座 DC905 白 5.5*2.1MM 3/0/3P 3/P DC充电座插口	J1	DC-005	Phonejack3	1
3B公头	Receptacle Assembly, 9 Position, Right Angle	J2	DB9/P_A	D Connector 9	1
MLZ2012N100L	固定电感器_10uH_20%_MLZ2012N1 30LT000	L1, L3, L4, L7	L 0805	Inductor	4
MZ790CD105N2H0	EPCOS 绕线 功_1mH,500mA	L2	IND0163-B	TRAN	1
15uH 3A	8*8功率电感 NR8028	L5, L8	NR8028	Inductor	2
JB201ZT2R2M	固定电感805贴	L6, L9, L10	L 0805	Inductor	3
ACP3225-102-2P-T000	TDK,片阻抗/滤 器,4.1uH,1.5A	L11, L15	ACP3225	TRANS1	2
JB201ZT1R0M	Taiyo Yuden 1uH 260mA	L12, L14, L16, L19	L 0805	Inductor	4
744232222	共模贴高频扼流器 2.2k 100MHz 200mA	L13, L18	744232222	TRANS4_2	2
1.8uH	功率电感 _0.075-074-0_CKCS 504040.8uH/M	L17	NRS040	INDUCTOR	1
*CB座标柱	连地座单贴器座标 M3MHX插针/2PCB针P/C接端子 pcb-2	P1	PCB接地柱	Header 2X2	1
Header 3	接线/CPCB座接地 3*KF 2EDGV-3.81mm 直针3P 3p	P3, P5	KF-3.81-3P	Header 3	2
开关接插件	IZ1R-3.81-4P-14G-30A 开关加接头	P4	KF-3.81-4P	Header 4	1
9P - JLINK-SW	Header, 5-Pin	P10	HDR2.54-LI-5P	Header 5	1
#MBT2907A	PNP 二极管	Q1	MMBT2907A	2N3906	1
SSP6134PH6327XT 3A1	P-Channel MOSFET	Q2	SSP6134PH6327XT 3A1	MOSFET-P	1
1_±5%	1_±5%_0603	R1, R2	1206R	Res2	2
22Ω_1%	22Ω_1%_0603	R3, R18, R46	0603R	Res2	3
1M	1M_5%_0805	R5, R34, R45	0805R	Res2	3
10K/1%	10K/1%_0603	R6, R11	0603R	Res	2
1M	Resistor	R7	0603R	Res2	1
1.8K/1%	1.8K/1%_0603	R8	0603R	Res	1
10k	10K_1%_0603, Resistor, 贴片电阻_0603	R9, R10, R138, R145	0603R	Res1, Res2	4
1.24K/1%	1.24K/1%_0603	R12	0603R	Res	1
4.7k	4.7k_1%_0603	R13, R14	0603R	Res1	2
20K_1%	20K_1%_0603	R15	0603R	Res2	1
10K_1%	10K_1%_0603	R16	0603R	Res2	1
100K_1%	100K_1%_0603	R17	0603R	Res2	1
3.3K_1%	3.3K_1%_0603	R19	0603R	Res2	1
4.7K	4.7K 1%_0402	R20, R21	0402R	Res2	2
15	15Ω 1%_0603	R22, R33	0603R	Res2	2
150	510_1%_0603	R23, R24, R25, -126	0603R	Res Semi	4
3.2K 1%	3.2K 1%/1%_0603, 3.2K 1%_0603	R27, R28	0402R	Res2	2
4.7K_1%	4.7K_1%_0603	R29, R31, R32, -140, R43, R44	0603R	电阻1/4	6
120_1%	120_1%_0603	R30, R41	0603R	Res_0603	2
1.45K_1%	6.45K_1%_0603	R35	0603R	Res2	1
3.19K_1%	6.19K_1%_0603	R36	0603R	Res2	1
3.09K_1%	3.09K_1%_0603	R37, R38	0603R	Res2	2
1M/1%	1M 1%_0603	R39	0603R	Res	1
14.7K_1%	14.7K_1%_0603	R46	0603R	Res2	1
7.87K_1%	7.87K_1%_0603	R47	0603R	Res2	1
150_0.1%	150_0.1%_0603	R49	0603R	Res	1
SW-PB	Switch	S1	3*6*5mm白色贴轻触开关	SW-PB	1
STM32F407VET6	ARM Cortex-M4 32-bit MCU+FPU, 210 DMIPS, 512 kB Flash, 192 kB Internal RAM, 82 I/Os, 100-pin LQFP, -40 to 85 degC, Tray	U1	ST84-LQFP100_N	STM32F407VET6	1
URB2424S-6WR3	全片贴DC-DC模块 模块 24V-24V 3W	U2	URB2424S-6WR3	WRB2424S-3WR2	1
TPS5430DDA	TLDC-DC电源芯片	U3, U8	SOIC-8	TPS5430DDA	2
#C78M05CDTG	MP_电源稳压芯 片_高效5V	U5	TO252	7805	1
REF5025AIDBZR	贴片参考电源	U6	SOT23-3N	R	1
3PA2171ADR	贴片集成电路	U7, U17	SO-8	OP262	2
V724C02W-10SR-2.7	存储芯片 SOP8	U9	24c02	AT24C02	1
XTR111AIDGQR	4-20mA转换芯片	U11	XTR111	XTR111AIDGQR	1
TD321548SH	全片贴485隔离模块 TD321	U12, U13	TD321548SH	TD321548SH	2
REF5050ID	基准电压芯片 SOIC-8	U14	REF5050ID	REF5050ID	1
AD7988-1BRMZ	精密转换器 - ADC	U15	MSOP10_N	AD7988	1
NMS1117-3.3V	线性稳压器 3.3V 1A	U19	SOT223_N	LM1117MP-3.3	1
32.768K	Crystal Oscillator	X1	OSC 3215-2P	XTAL	1
8M	SMD-5032_2P 8M 2	Y1	OSC 5032-2P	XTAL	1