附件：具体技术规格要求：

1. **ECP-JK2接口适配箱技术指标**

表1 ECP-JK2接口适配箱连接关系表

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **转接箱** | | | | | | | | **主机侧** | | |
| **定义** | **数量** | **接插件型号（连接被测设备）** | **端子丝印** | **使用端子** | | | | **使用端子** | **板卡型号** | **机箱位置** |
| IO  （输出） | 1 | WAGO/或类似连接器 | OUT-1 | Relay1- | | | | 1 | POWER2-24V  DO（37芯母） | -  2 |
| Relay2- | | | | 2 |
| Relay3- | | | | 3 |
| Relay4- | | | | 4 |
| Relay5- | | | | 5 |
| Relay6- | | | | 6 |
| Relay7- | | | | 7 |
| Relay8- | | | | 8 |
| Relay9- | | | | 10 |
| Relay10- | | | | 11 |
| Relay11- | | | | 12 |
| Relay12- | | | | 13 |
| Relay13- | | | | 14 |
| Relay14- | | | | 15 |
| Relay15- | | | | 16 |
| Relay16- | | | | 17 |
| Relay17- | | | | 20 |
| Relay18- | | | | 21 |
| Relay19- | | | | 22 |
| Relay20- | | | | 23 |
| Relay21- | | | | 24 |
| Relay22- | | | | 25 |
| Relay23- | | | | 26 |
| Relay24- | | | | 27 |
| Relay25- | | | | 29 |
| Relay26- | | | | 30 |
| Relay27- | | | | 31 |
| Relay28- | | | | 32 |
| Relay29- | | | | 33 |
| Relay30- | | | | 34 |
| Relay31- | | | | 35 |
| Relay32- | | | | 36 |
| Relay1+、Relay2...Relay32， | | | | POWER2+ |
|  | | | | 9，18，28，37，POWER2- |
| 1，Relay1-1 | | | | - |
| 2，Relay2-1 | | | | - |
| 3，Relay3-1 | | | | - |
| 4，Relay4-1 | | | | - |
| 5，Relay5-1 | | | | - |
| 6，Relay6-1 | | | | - |
| 7，Relay7-1 | | | | - |
| 8，Relay8-1 | | | | - |
| 9，Relay9-1 | | | | - |
| 10，Relay10-1 | | | | - |
| 11，Relay11-1 | | | | - |
| 12，Relay12-1 | | | | - |
| 13，Relay13-1 | | | | - |
| 14，Relay14-1 | | | | - |
| 15，Relay15-1 | | | | - |
| 16，Relay16-1 | | | | - |
| 17，Relay17-1 | | | |  |
| 18，Relay18-1 | | | |  |
| 19，Relay19-1 | | | |  |
| 20，Relay20-1 | | | |  |
| 21，Relay21-1 | | | |  |
| 22，Relay22-1 | | | |  |
| 23，Relay23-1 | | | |  |
| 24，Relay24-1 | | | |  |
| 25，Relay25-1 | | | |  |
| 26，Relay26-1 | | | |  |
| 27，Relay27-1 | | | |  |
| 28，Relay28-1 | | | |  |
| 29，Relay29-1 | | | |  |
| 30，Relay30-1 | | | |  |
| 31，Relay31-1 | | | |  |
| 32，Relay32-1 | | | |  |
| 33，Relay1-3 | | | 33-64可通过短路销短接 |  |
| 34，Relay2-3 | | |  |
| 35，Relay3-3 | | |  |
| 36，Relay4-3 | | |  |
| 37，Relay5-3 | | |  |
| 38，Relay6-3 | | |  |
| 39，Relay7-3 | | |  |
| 40，Relay8-3 | | |  |
| 41，Relay9-3 | | |  |
| 42，Relay10-3 | | |  |
| 43，Relay11-3 | | |  |
| 44，Relay12-3 | | |  |
| 45，Relay13-3 | | |  |
| 46，Relay14-3 | | |  |
| 47，Relay15-3 | | |  |
| 48，Relay16-3 | | |  |
| 49，Relay17-3 | | |  |
| 50，Relay18-3 | | |  |
| 51，Relay19-3 | | |  |
| 52，Relay20-3 | | |  |
| 53，Relay21-3 | | |  |
| 54，Relay22-3 | | |  |
| 55，Relay23-3 | | |  |
| 56，Relay24-3 | | |  |
| 57，Relay25-3 | | |  |
| 58，Relay26-3 | | |  |
| 59，Relay27-3 | | |  |
| 60，Relay28-3 | | |  |
| 61，Relay29-3 | | |  |  |
| 62，Relay30-3 | | |  |
| 63，Relay31-3 | | |  |
| 64，Relay32-3 | | |  |
| IO  （输出） | 1 | WAGO/或类似连接器 | OUT-2 | Relay33- | | | | 1 | POWER2-24V  DO  （37芯母） | -  3 |
| Relay34- | | | | 2 |
| Relay35- | | | | 3 |
| Relay36- | | | | 4 |
| Relay37- | | | | 5 |
| Relay38- | | | | 6 |
| Relay39- | | | | 7 |
| Relay40- | | | | 8 |
| Relay41- | | | | 10 |
| Relay42- | | | | 11 |
| Relay43- | | | | 12 |
| Relay44- | | | | 13 |
| Relay45- | | | | 14 |
| Relay46- | | | | 15 |
| Relay47- | | | | 16 |
| Relay48- | | | | 17 |
| Relay49- | | | | 20 |
| Relay50- | | | | 21 |
| Relay51- | | | | 22 |
| Relay52- | | | | 23 |
| Relay53- | | | | 24 |
| Relay54- | | | | 25 |
| Relay55- | | | | 26 |
| Relay56- | | | | 27 |
| Relay57- | | | | 29 |
| Relay58- | | | | 30 |
| Relay59- | | | | 31 |
| Relay60- | | | | 32 |
| Relay61- | | | | 33 |
| Relay62- | | | | 34 |
| Relay63- | | | | 35 |
| Relay64- | | | | 36 |
| Relay33+、Relay34...Relay64， | | | | POWER2+ |
|  | | | | 9，18，28，37，POWER2- |
| 1，Relay33-1 | | | | - |
| 2，Relay34-1 | | | | - |
| 3，Relay35-1 | | | | - |
| 4，Relay36-1 | | | | - |
| 5，Relay37-1 | | | | - |
| 6，Relay38-1 | | | | - |
| 7，Relay39-1 | | | | - |
| 8，Relay40-1 | | | | - |
| 9，Relay41-1 | | | | - |
| 10，Relay42-1 | | | | - |
| 11，Relay43-1 | | | | - |
| 12，Relay44-1 | | | | - |
| 13，Relay45-1 | | | | - |
| 14，Relay46-1 | | | | - |
| 15，Relay47-1 | | | | - |
| 16，Relay48-1 | | | | - |
| 17，Relay49-1 | | | |  |
| 18，Relay50-1 | | | |  |
| 19，Relay51-1 | | | |  |
| 20，Relay52-1 | | | |  |
| 21，Relay53-1 | | | |  |
| 22，Relay54-1 | | | |  |
| 23，Relay55-1 | | | |  |
| 24，Relay56-1 | | | |  |
| 25，Relay57-1 | | | |  |
| 26，Relay58-1 | | | |  |
| 27，Relay59-1 | | | |  |
| 28，Relay60-1 | | | |  |
| 29，Relay61-1 | | | |  |
| 30，Relay62-1 | | | |  |
| 31，Relay63-1 | | | |  |
| 32，Relay64-1 | | | |  |
| 33，Relay33-3 | | | 33-64可通过短路销短接 |  |
| 34，Relay34-3 | | |  |
| 35，Relay35-3 | | |  |
| 36，Relay36-3 | | |  |
| 37，Relay37-3 | | |  |
| 38，Relay38-3 | | |  |
| 39，Relay39-3 | | |  |
| 40，Relay40-3 | | |  |
| 41，Relay41-3 | | |  |
| 42，Relay42-3 | | |  |
| 43，Relay43-3 | | |  |
| 44，Relay44-3 | | |  |
| 45，Relay45-3 | | |  |
| 46，Relay46-3 | | |  |
| 47，Relay47-3 | | |  |
| 48，Relay48-3 | | |  |
| 49，Relay49-3 | | |  |
| 50，Relay50-3 | | |  |
| 51，Relay51-3 | | |  |
| 52，Relay52-3 | | |  |
| 53，Relay53-3 | | |  |
| 54，Relay54-3 | | |  |
| 55，Relay55-3 | | |  |
| 56，Relay56-3 | | |  |
| 57，Relay57-3 | | |  |
| 58，Relay58-3 | | |  |
| 59，Relay59-3 | | |  |
| 60，Relay60-3 | | |  |
| 61，Relay61-3 | | |  |
| 62，Relay62-3 | | |  |
| 63，Relay63-3 | | |  |
| 64，Relay64-3 | | |  |
| IO  （输出） | 1 | WAGO/或类似连接器 | OUT-3 | Relay65- | | | | 1 | POWER2-24V  DO  （37芯母） | -  4 |
| Relay66- | | | | 2 |
| Relay67- | | | | 3 |
| Relay68- | | | | 4 |
| Relay69- | | | | 5 |
| Relay70- | | | | 6 |
| Relay71- | | | | 7 |
| Relay72- | | | | 8 |
| Relay73- | | | | 10 |
| Relay74- | | | | 11 |
| Relay75- | | | | 12 |
| Relay76- | | | | 13 |
| Relay77- | | | | 14 |
| Relay78- | | | | 15 |
| Relay79- | | | | 16 |
| Relay80- | | | | 17 |
| Relay81- | | | | 20 |
| Relay82- | | | | 21 |
| Relay83- | | | | 22 |
| Relay84- | | | | 23 |
| Relay85- | | | | 24 |
| Relay86- | | | | 25 |
| Relay87- | | | | 26 |
| Relay88- | | | | 27 |
| Relay89- | | | | 29 |
| Relay90- | | | | 30 |
| Relay91- | | | | 31 |
| Relay92- | | | | 32 |
| Relay93- | | | | 33 |
| Relay94- | | | | 34 |
| Relay95- | | | | 35 |
| Relay96- | | | | 36 |
| Relay65+、Relay66...Relay96， | | | | POWER2+ |
|  | | | | 9，18，28，37，POWER2- |
| 1，Relay65-1 | | | | - |
| 2，Relay66-1 | | | | - |
| 3，Relay67-1 | | | | - |
| 4，Relay68-1 | | | | - |
| 5，Relay69-1 | | | | - |
| 6，Relay70-1 | | | | - |
| 7，Relay71-1 | | | | - |
| 8，Relay72-1 | | | | - |
| 9，Relay73-1 | | | | - |
| 10，Relay74-1 | | | | - |
| 11，Relay75-1 | | | | - |
| 12，Relay76-1 | | | | - |
| 13，Relay77-1 | | | | - |
| 14，Relay78-1 | | | | - |
| 15，Relay79-1 | | | | - |
| 16，Relay80-1 | | | | - |
| 17，Relay81-1 | | | |  |
| 18，Relay82-1 | | | |  |
| 19，Relay83-1 | | | |  |
| 20，Relay84-1 | | | |  |
| 21，Relay85-1 | | | |  |
| 22，Relay86-1 | | | |  |
| 23，Relay87-1 | | | |  |
| 24，Relay88-1 | | | |  |
| 25，Relay89-1 | | | |  |
| 26，Relay90-1 | | | |  |
| 27，Relay91-1 | | | |  |
| 28，Relay92-1 | | | |  |
| 29，Relay93-1 | | | |  |
| 30，Relay94-1 | | | |  |
| 31，Relay95-1 | | | |  |
| 32，Relay96-1 | | | |  |
| 33，Relay65-3 | | | 33-64可通过短路销短接 |  |
| 34，Relay66-3 | | |  |
| 35，Relay67-3 | | |  |
| 36，Relay68-3 | | |  |
| 37，Relay69-3 | | |  |
| 38，Relay70-3 | | |  |
| 39，Relay71-3 | | |  |
| 40，Relay72-3 | | |  |
| 41，Relay73-3 | | |  |
| 42，Relay74-3 | | |  |
| 43，Relay75-3 | | |  |
| 44，Relay76-3 | | |  |
| 45，Relay77-3 | | |  |
| 46，Relay78-3 | | |  |
| 47，Relay79-3 | | |  |
| 48，Relay80-3 | | |  |
| 49，Relay81-3 | | |  |
| 50，Relay82-3 | | |  |
| 51，Relay83-3 | | |  |
| 52，Relay84-3 | | |  |
| 53，Relay85-3 | | |  |
| 54，Relay86-3 | | |  |
| 55，Relay87-3 | | |  |
| 56，Relay88-3 | | |  |
| 57，Relay89-3 | | |  |
| 58，Relay90-3 | | |  |
| 59，Relay91-3 | | |  |
| 60，Relay92-3 | | |  |
| 61，Relay93-3 | | |  |
| 62，Relay94-3 | | |  |
| 63，Relay95-3 | | |  |
| 64，Relay96-3 | | |  |
| IO  （输入） | 1 | WAGO/或类似连接器 | IN-1 | 1，R1-1 | | | |  | POWER1-110V  DI  （37芯公） | -  5 |
| 2，R2-1 | | | |  |
| 3，R3-1 | | | |  |
| 4，R4-1 | | | |  |
| 5，R5-1 | | | |  |
| 6，R6-1 | | | |  |
| 7，R7-1 | | | |  |
| 8，R8-1 | | | |  |
| 9，R9-1 | | | |  |
| 10，R10-1 | | | |  |
| 11，R11-1 | | | |  |
| 12，R12-1 | | | |  |
| 13，R13-1 | | | |  |
| 14，R14-1 | | | |  |
| 15，R15-1 | | | |  |
| 16，R16-1 | | | |  |
| 17，R17-1 | | | |  |
| 18，R18-1 | | | |  |
| 19，R19-1 | | | |  |
| 20，R20-1 | | | |  |
| 21，R21-1 | | | |  |
| 22，R22-1 | | | |  |
| 23，R23-1 | | | |  |
| 24，R24-1 | | | |  |
| 25，R25-1 | | | |  |
| 26，R26-1 | | | |  |
| 27，R27-1 | | | |  |
| 28，R28-1 | | | |  |
| 29，R29-1 | | | |  |
| 30，R30-1 | | | |  |
| 31，R31-1 | | | |  |
| 32，R32-1 | | | |  |
| R1-2 | | | | 1 |
| R2-2 | | | | 2 |
| R3-2 | | | | 3 |
| R4-2 | | | | 4 |
| R5-2 | | | | 5 |
| R6-2 | | | | 6 |
| R7-2 | | | | 7 |
| R8-2 | | | | 8 |
| R9-2 | | | | 10 |
| R10-2 | | | | 11 |
| R11-2 | | | | 12 |
| R12-2 | | | | 13 |
| R13-2 | | | | 14 |
| R14-2 | | | | 15 |
| R15-2 | | | | 16 |
| R16-2 | | | | 17 |
| R17-2 | | | | 20 |
| R18-2 | | | | 21 |
| R19-2 | | | | 22 |
| R20-2 | | | | 23 |
| R21-2 | | | | 24 |
| R22-2 | | | | 25 |
| R23-2 | | | | 26 |
| R24-2 | | | | 27 |
| R25-2 | | | | 29 |
| R26-2 | | | | 30 |
| R27-2 | | | | 31 |
| R28-2 | | | | 32 |
| R29-2 | | | | 33 |
| R30-2 | | | | 34 |
| R31-2 | | | | 35 |
| R32-2 | | | | 36 |
| 33 | | 33-36可通过短路销短接 | | 9 |
| 34 | | 18 |
| 35 | | 28 |
| 36 | | 37 |
| IO  （输入） | 1 | WAGO/或类似连接器 | IN-2 | 1，R33-1 | | | |  | POWER1-110V  DI  （37芯公） | -  6 |
| 2，R34-1 | | | |  |
| 3，R35-1 | | | |  |
| 4，R36-1 | | | |  |
| 5，R37-1 | | | |  |
| 6，R38-1 | | | |  |
| 7，R39-1 | | | |  |
| 8，R40-1 | | | |  |
| 9，R41-1 | | | |  |
| 10，R42-1 | | | |  |
| 11，R43-1 | | | |  |
| 12，R44-1 | | | |  |
| 13，R45-1 | | | |  |
| 14，R46-1 | | | |  |
| 15，R47-1 | | | |  |
| 16，R48-1 | | | |  |
| 17，R49-1 | | | |  |
| 18，R50-1 | | | |  |
| 19，R51-1 | | | |  |
| 20，R52-1 | | | |  |
| 21，R53-1 | | | |  |
| 22，R54-1 | | | |  |
| 23，R55-1 | | | |  |
| 24，R56-1 | | | |  |
| 25，R57-1 | | | |  |
| 26，R58-1 | | | |  |
| 27，R59-1 | | | |  |
| 28，R60-1 | | | |  |
| 29，R61-1 | | | |  |
| 30，R62-1 | | | |  |
| 31，R63-1 | | | |  |
| 32，R64-1 | | | |  |
| R33-2 | | | | 1 |
| R34-2 | | | | 2 |
| R35-2 | | | | 3 |
| R36-2 | | | | 4 |
| R37-2 | | | | 5 |
| R38-2 | | | | 6 |
| R39-2 | | | | 7 |
| R40-2 | | | | 8 |
| R41-2 | | | | 10 |
| R42-2 | | | | 11 |
| R43-2 | | | | 12 |
| R44-2 | | | | 13 |
| R45-2 | | | | 14 |
| R46-2 | | | | 15 |
| R47-2 | | | | 16 |
| R48-2 | | | | 17 |
| R49-2 | | | | 20 |
| R50-2 | | | | 21 |
| R51-2 | | | | 22 |
| R52-2 | | | | 23 |
| R53-2 | | | | 24 |
| R54-2 | | | | 25 |
| R55-2 | | | | 26 |
| R56-2 | | | | 27 |
| R57-2 | | | | 29 |
| R58-2 | | | | 30 |
| R59-2 | | | | 31 |
| R60-2 | | | | 32 |
| R61-2 | | | | 33 |
| R62-2 | | | | 34 |
| R63-2 | | | | 35 |
| R64-2 | | | | 36 |
| 33 | 33-36可通过短路销短接 | | | 9 |
| 34 | 18 |
| 35 | 28 |
| 36 | 37 |
| 速传 | 1 | WAGO/或类似连接器 | Speed | 1-power，速传转接板-1 | | | |  | - | - |
| 2-out，速传转接板-2 | | | |  |
| 3-gnd，速传转接板-3 | | | |  |
| 4-power，速传转接板-4 | | | |  |
| 5-out，速传转接板-5 | | | |  |
| 6-gnd，速传转接板-6 | | | |  |
| 7-power，速传转接板-7 | | | |  |
| 8-out，速传转接板-8 | | | |  |
| 9-gnd，速传转接板-9 | | | |  |
| 10-power，速传转接板-10 | | | |  |
| 11-out，速传转接板-11 | | | |  |
| 12-gnd，速传转接板-12 | | | |  |
| 13-power，速传转接板-13 | | | |  |
| 14-out，速传转接板-14 | | | |  |
| 15-gnd，速传转接板-15 | | | |  |
| 16-power，速传转接板-16 | | | |  |
| 17-out，速传转接板-17 | | | |  |
| 18-gnd，速传转接板-18 | | | |  |
| USB | 1 | USB母头 | Config | USB，速传转接板USB | | | |  | - | - |
| 电源 | 1 | WAGO/或类似连接器 | POWER110 | 1，2，3，4，5，6，7，8 | | | | POWER1+ | POWER1-110V  （冗余橡胶插孔） | - |
| 9，10，11，12，13，14，15，16 | | | | POWER1- |
| 电源 | 1 | WAGO/或类似连接器 | POWER24 | 1，2，3，4，5，6，7，8 | | | | POWER2+ | POWER1-24V  （冗余橡胶插孔） | - |
| 9，10，11，12，13，14，15，16 | | | | POWER2- |
| 串口 | 1 | WAGO/或类似连接器 | Serial | 1 | | | | COM1-1 | 串口通信卡  （DB9公） | 7 |
| 2 | | | | COM1-2 |
| 3 | | | | COM1-3 |
| 4 | | | | COM1-4 |
| 5 | | | | COM1-5 |
| 6 | | | | COM1-6 |
| 7 | | | | COM1-7 |
| 8 | | | | COM1-8 |
| 9 | | | | COM1-9 |
| 串口 | 1 | WAGO/或类似连接器 | Serial | 1 | | | | COM2-1 | 串口通信卡  （DB9公） | 7 |
| 2 | | | | COM2-2 |
| 3 | | | | COM2-3 |
| 4 | | | | COM2-4 |
| 5 | | | | COM2-5 |
| 6 | | | | COM2-6 |
| 7 | | | | COM2-7 |
| 8 | | | | COM2-8 |
| 9 | | | | COM2-9 |

技术要求：

1、上表中转接箱的连接器用于连接被测设备，转接箱连接主机的连接器（未在表中体现），应自行考虑。

2、上表中主机侧的连接器是测试主机的接口，应使用成套线缆连接至转接箱接口（未在表中体现），再由转接箱内部进行配线后引至转接箱连接被测设备的连接器。

3、转接箱内部需要增加速度转接板，本次设计院提供，后续提供PCB一并加工。

4、WAGO/或类似连接器布置要紧凑，方便一根线缆同时存在输入、输出、串口的配线情况。

5、测试主机上丝印“车载信号转接单元”、速传接口丝印USB-P、信号发生模块丝印USB-S。

6、测试主机线缆连接至转接箱前面板，被测设备的线缆连接至转接箱后面板。

7、测试主机和转接箱在机柜内上下靠近放置，转接箱上下预留1U空间，应配置有挡板方便外部线缆的穿线及绑扎。

8、测试主机前后均有连接器，存在测试主机的前出线和后出线均连接至转接箱的前面板，因此需要注意测试主机和转接箱之间的线缆长度，保证整体美观。

9、转接箱内部配线须有线号，结构拆卸方便，易于维护。

10、面板FSK信号发生模块四个端子，两个用于正常外接信号线，另外两个用于测试。

11、整体费用应考虑加工和一定的现场配线工作。

表2 接口适配箱配套线缆要求

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 序号 | 测试平台侧 | 被测设备侧 | 线缆数量 | 连接关系 |
| 1 | 压接端子散线 | 19000005092  19300101441  09160423101  （待定） | 3 | - |
| 2 | 压接端子散线 | XC158A/22T14Z1P13（B）  XC158/22FJ3P13D1  （待定） | 1 | 航插1-9对应speed1-9 |
| 3 | 压接端子散线 | XC158A/22T14Z1P13(X)（B）  XC158/22FJ3P13D1  （待定） | 1 | 航插1-9对应speed10-18 |
| 4 | 压接端子散线 | RS422连接器  （待定） | 2 |  |
| 5 | DB9（母） | RS422连接器  （待定） | 6 |  |
| 6 | DB9（母） | CAN连接器  （待定） | 4 |  |
| 7 | DB9（公） | DB9（母） | 1 | 屏蔽线 |
| 8 | DB9（公） | DB9（公） | 1 | 屏蔽线 |
| 9 | MIC-3716  （待定） | 电流环、电压传感器连接器  （待定） | 1 |  |
| 10 | USB公 | USB公 | 2 |  |

1. **ECP-JK3接口箱技术指标**

表1 ECP-JK3接口适配箱连接关系表

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **转接箱** | | | | | | | | | **主机侧** | | |
| **定义** | **数量** | **接插件型号（连接被测设备）** | **端子丝印** | **使用端子** | | | | | **使用端子** | **板卡型号** | **机箱位置** |
| IO  （输出） | 1 | 橡胶孔 | OUT-1 | Relay1- | | | | | 1 | POWER2-24V  DO（37芯母） | -  2 |
| Relay2- | | | | | 2 |
| Relay3- | | | | | 3 |
| Relay4- | | | | | 4 |
| Relay5- | | | | | 5 |
| Relay6- | | | | | 6 |
| Relay7- | | | | | 7 |
| Relay8- | | | | | 8 |
| Relay9- | | | | | 10 |
| Relay10- | | | | | 11 |
| Relay11- | | | | | 12 |
| Relay12- | | | | | 13 |
| Relay13- | | | | | 14 |
| Relay14- | | | | | 15 |
| Relay15- | | | | | 16 |
| Relay16- | | | | | 17 |
| Relay17- | | | | | 20 |
| Relay18- | | | | | 21 |
| Relay19- | | | | | 22 |
| Relay20- | | | | | 23 |
| Relay21- | | | | | 24 |
| Relay22- | | | | | 25 |
| Relay23- | | | | | 26 |
| Relay24- | | | | | 27 |
| Relay25- | | | | | 29 |
| Relay26- | | | | | 30 |
| Relay27- | | | | | 31 |
| Relay28- | | | | | 32 |
| Relay29- | | | | | 33 |
| Relay30- | | | | | 34 |
| Relay31- | | | | | 35 |
| Relay32- | | | | | 36 |
| Relay1+、Relay2...Relay32， | | | | | POWER2+ |
|  | | | | | 9，18，28，37，POWER2- |
| 1，Relay1-1 | | | | | - |
| 2，Relay2-1 | | | | | - |
| 3，Relay3-1 | | | | | - |
| 4，Relay4-1 | | | | | - |
| 5，Relay5-1 | | | | | - |
| 6，Relay6-1 | | | | | - |
| 7，Relay7-1 | | | | | - |
| 8，Relay8-1 | | | | | - |
| 9，Relay9-1 | | | | | - |
| 10，Relay10-1 | | | | | - |
| 11，Relay11-1 | | | | | - |
| 12，Relay12-1 | | | | | - |
| 13，Relay13-1 | | | | | - |
| 14，Relay14-1 | | | | | - |
| 15，Relay15-1 | | | | | - |
| 16，Relay16-1 | | | | | - |
| 17，Relay17-1 | | | | |  |
| 18，Relay18-1 | | | | |  |
| 19，Relay19-1 | | | | |  |
| 20，Relay20-1 | | | | |  |
| 21，Relay21-1 | | | | |  |
| 22，Relay22-1 | | | | |  |
| 23，Relay23-1 | | | | |  |
| 24，Relay24-1 | | | | |  |
| 25，Relay25-1 | | | | |  |
| 26，Relay26-1 | | | | |  |
| 27，Relay27-1 | | | | |  |
| 28，Relay28-1 | | | | |  |
| 29，Relay29-1 | | | | |  |
| 30，Relay30-1 | | | | |  |
| 31，Relay31-1 | | | | |  |
| 32，Relay32-1 | | | | |  |
| 33，Relay1-3 | | | 33-64设置独立的钮子开关，可切换power110+、power24+、置空 | |  |
| 34，Relay2-3 | | |  |
| 35，Relay3-3 | | |  |
| 36，Relay4-3 | | |  |
| 37，Relay5-3 | | |  |
| 38，Relay6-3 | | |  |
| 39，Relay7-3 | | |  |
| 40，Relay8-3 | | |  |
| 41，Relay9-3 | | |  |
| 42，Relay10-3 | | |  |
| 43，Relay11-3 | | |  |
| 44，Relay12-3 | | |  |
| 45，Relay13-3 | | |  |
| 46，Relay14-3 | | |  |
| 47，Relay15-3 | | |  |
| 48，Relay16-3 | | |  |
| 49，Relay17-3 | | |  |
| 50，Relay18-3 | | |  |
| 51，Relay19-3 | | |  |
| 52，Relay20-3 | | |  |
| 53，Relay21-3 | | |  |
| 54，Relay22-3 | | |  |
| 55，Relay23-3 | | |  |
| 56，Relay24-3 | | |  |
| 57，Relay25-3 | | |  |
| 58，Relay26-3 | | |  |
| 59，Relay27-3 | | |  |
| 60，Relay28-3 | | |  |
| 61，Relay29-3 | | |  | |  |
| 62，Relay30-3 | | |  |
| 63，Relay31-3 | | |  |
| 64，Relay32-3 | | |  |
| IO  （输出） | 1 | 橡胶孔 | OUT-2 | Relay33- | | | | | 1 | POWER2-24V  DO  （37芯母） | -  3 |
| Relay34- | | | | | 2 |
| Relay35- | | | | | 3 |
| Relay36- | | | | | 4 |
| Relay37- | | | | | 5 |
| Relay38- | | | | | 6 |
| Relay39- | | | | | 7 |
| Relay40- | | | | | 8 |
| Relay41- | | | | | 10 |
| Relay42- | | | | | 11 |
| Relay43- | | | | | 12 |
| Relay44- | | | | | 13 |
| Relay45- | | | | | 14 |
| Relay46- | | | | | 15 |
| Relay47- | | | | | 16 |
| Relay48- | | | | | 17 |
| Relay49- | | | | | 20 |
| Relay50- | | | | | 21 |
| Relay51- | | | | | 22 |
| Relay52- | | | | | 23 |
| Relay53- | | | | | 24 |
| Relay54- | | | | | 25 |
| Relay55- | | | | | 26 |
| Relay56- | | | | | 27 |
| Relay57- | | | | | 29 |
| Relay58- | | | | | 30 |
| Relay59- | | | | | 31 |
| Relay60- | | | | | 32 |
| Relay61- | | | | | 33 |
| Relay62- | | | | | 34 |
| Relay63- | | | | | 35 |
| Relay64- | | | | | 36 |
| Relay33+、Relay34...Relay64， | | | | | POWER2+ |
|  | | | | | 9，18，28，37，POWER2- |
| 1，Relay33-1 | | | | | - |
| 2，Relay34-1 | | | | | - |
| 3，Relay35-1 | | | | | - |
| 4，Relay36-1 | | | | | - |
| 5，Relay37-1 | | | | | - |
| 6，Relay38-1 | | | | | - |
| 7，Relay39-1 | | | | | - |
| 8，Relay40-1 | | | | | - |
| 9，Relay41-1 | | | | | - |
| 10，Relay42-1 | | | | | - |
| 11，Relay43-1 | | | | | - |
| 12，Relay44-1 | | | | | - |
| 13，Relay45-1 | | | | | - |
| 14，Relay46-1 | | | | | - |
| 15，Relay47-1 | | | | | - |
| 16，Relay48-1 | | | | | - |
| 17，Relay49-1 | | | | |  |
| 18，Relay50-1 | | | | |  |
| 19，Relay51-1 | | | | |  |
| 20，Relay52-1 | | | | |  |
| 21，Relay53-1 | | | | |  |
| 22，Relay54-1 | | | | |  |
| 23，Relay55-1 | | | | |  |
| 24，Relay56-1 | | | | |  |
| 25，Relay57-1 | | | | |  |
| 26，Relay58-1 | | | | |  |
| 27，Relay59-1 | | | | |  |
| 28，Relay60-1 | | | | |  |
| 29，Relay61-1 | | | | |  |
| 30，Relay62-1 | | | | |  |
| 31，Relay63-1 | | | | |  |
| 32，Relay64-1 | | | | |  |
| 33，Relay33-3 | | | 33-64设置独立的钮子开关，可切换power110+、power24+、置空 | |  |
| 34，Relay34-3 | | |  |
| 35，Relay35-3 | | |  |
| 36，Relay36-3 | | |  |
| 37，Relay37-3 | | |  |
| 38，Relay38-3 | | |  |
| 39，Relay39-3 | | |  |
| 40，Relay40-3 | | |  |
| 41，Relay41-3 | | |  |
| 42，Relay42-3 | | |  |
| 43，Relay43-3 | | |  |
| 44，Relay44-3 | | |  |
| 45，Relay45-3 | | |  |
| 46，Relay46-3 | | |  |
| 47，Relay47-3 | | |  |
| 48，Relay48-3 | | |  |
| 49，Relay49-3 | | |  |
| 50，Relay50-3 | | |  |
| 51，Relay51-3 | | |  |
| 52，Relay52-3 | | |  |
| 53，Relay53-3 | | |  |
| 54，Relay54-3 | | |  |
| 55，Relay55-3 | | |  |
| 56，Relay56-3 | | |  |
| 57，Relay57-3 | | |  |
| 58，Relay58-3 | | |  |
| 59，Relay59-3 | | |  |
| 60，Relay60-3 | | |  |
| 61，Relay61-3 | | |  |
| 62，Relay62-3 | | |  |
| 63，Relay63-3 | | |  |
| 64，Relay64-3 | | |  |
| IO  （输出） | 1 | 橡胶孔 | OUT-3 | Relay65- | | | | | 1 | POWER2-24V  DO  （37芯母） | -  4 |
| Relay66- | | | | | 2 |
| Relay67- | | | | | 3 |
| Relay68- | | | | | 4 |
| Relay69- | | | | | 5 |
| Relay70- | | | | | 6 |
| Relay71- | | | | | 7 |
| Relay72- | | | | | 8 |
| Relay73- | | | | | 10 |
| Relay74- | | | | | 11 |
| Relay75- | | | | | 12 |
| Relay76- | | | | | 13 |
| Relay77- | | | | | 14 |
| Relay78- | | | | | 15 |
| Relay79- | | | | | 16 |
| Relay80- | | | | | 17 |
| Relay81- | | | | | 20 |
| Relay82- | | | | | 21 |
| Relay83- | | | | | 22 |
| Relay84- | | | | | 23 |
| Relay85- | | | | | 24 |
| Relay86- | | | | | 25 |
| Relay87- | | | | | 26 |
| Relay88- | | | | | 27 |
| Relay89- | | | | | 29 |
| Relay90- | | | | | 30 |
| Relay91- | | | | | 31 |
| Relay92- | | | | | 32 |
| Relay93- | | | | | 33 |
| Relay94- | | | | | 34 |
| Relay95- | | | | | 35 |
| Relay96- | | | | | 36 |
| Relay65+、Relay66...Relay96， | | | | | POWER2+ |
|  | | | | | 9，18，28，37，POWER2- |
| 1，Relay65-1 | | | | | - |
| 2，Relay66-1 | | | | | - |
| 3，Relay67-1 | | | | | - |
| 4，Relay68-1 | | | | | - |
| 5，Relay69-1 | | | | | - |
| 6，Relay70-1 | | | | | - |
| 7，Relay71-1 | | | | | - |
| 8，Relay72-1 | | | | | - |
| 9，Relay73-1 | | | | | - |
| 10，Relay74-1 | | | | | - |
| 11，Relay75-1 | | | | | - |
| 12，Relay76-1 | | | | | - |
| 13，Relay77-1 | | | | | - |
| 14，Relay78-1 | | | | | - |
| 15，Relay79-1 | | | | | - |
| 16，Relay80-1 | | | | | - |
| 17，Relay81-1 | | | | |  |
| 18，Relay82-1 | | | | |  |
| 19，Relay83-1 | | | | |  |
| 20，Relay84-1 | | | | |  |
| 21，Relay85-1 | | | | |  |
| 22，Relay86-1 | | | | |  |
| 23，Relay87-1 | | | | |  |
| 24，Relay88-1 | | | | |  |
| 25，Relay89-1 | | | | |  |
| 26，Relay90-1 | | | | |  |
| 27，Relay91-1 | | | | |  |
| 28，Relay92-1 | | | | |  |
| 29，Relay93-1 | | | | |  |
| 30，Relay94-1 | | | | |  |
| 31，Relay95-1 | | | | |  |
| 32，Relay96-1 | | | | |  |
| 33，Relay65-3 | | | 33-64设置独立的钮子开关，可切换power110+、power24+、置空 | |  |
| 34，Relay66-3 | | |  |
| 35，Relay67-3 | | |  |
| 36，Relay68-3 | | |  |
| 37，Relay69-3 | | |  |
| 38，Relay70-3 | | |  |
| 39，Relay71-3 | | |  |
| 40，Relay72-3 | | |  |
| 41，Relay73-3 | | |  |
| 42，Relay74-3 | | |  |
| 43，Relay75-3 | | |  |
| 44，Relay76-3 | | |  |
| 45，Relay77-3 | | |  |
| 46，Relay78-3 | | |  |
| 47，Relay79-3 | | |  |
| 48，Relay80-3 | | |  |
| 49，Relay81-3 | | |  |
| 50，Relay82-3 | | |  |
| 51，Relay83-3 | | |  |
| 52，Relay84-3 | | |  |
| 53，Relay85-3 | | |  |
| 54，Relay86-3 | | |  |
| 55，Relay87-3 | | |  |
| 56，Relay88-3 | | |  |
| 57，Relay89-3 | | |  |
| 58，Relay90-3 | | |  |
| 59，Relay91-3 | | |  |
| 60，Relay92-3 | | |  |
| 61，Relay93-3 | | |  |
| 62，Relay94-3 | | |  |
| 63，Relay95-3 | | |  |
| 64，Relay96-3 | | |  |
| IO  （输入） | 1 | 橡胶孔 | IN-1 | 1，R1-1 | | | | |  | POWER1-110V  DI  （37芯公） | -  5 |
| 2，R2-1 | | | | |  |
| 3，R3-1 | | | | |  |
| 4，R4-1 | | | | |  |
| 5，R5-1 | | | | |  |
| 6，R6-1 | | | | |  |
| 7，R7-1 | | | | |  |
| 8，R8-1 | | | | |  |
| 9，R9-1 | | | | |  |
| 10，R10-1 | | | | |  |
| 11，R11-1 | | | | |  |
| 12，R12-1 | | | | |  |
| 13，R13-1 | | | | |  |
| 14，R14-1 | | | | |  |
| 15，R15-1 | | | | |  |
| 16，R16-1 | | | | |  |
| 17，R17-1 | | | | |  |
| 18，R18-1 | | | | |  |
| 19，R19-1 | | | | |  |
| 20，R20-1 | | | | |  |
| 21，R21-1 | | | | |  |
| 22，R22-1 | | | | |  |
| 23，R23-1 | | | | |  |
| 24，R24-1 | | | | |  |
| 25，R25-1 | | | | |  |
| 26，R26-1 | | | | |  |
| 27，R27-1 | | | | |  |
| 28，R28-1 | | | | |  |
| 29，R29-1 | | | | |  |
| 30，R30-1 | | | | |  |
| 31，R31-1 | | | | |  |
| 32，R32-1 | | | | |  |
| R1-2 | | | | | 1 |
| R2-2 | | | | | 2 |
| R3-2 | | | | | 3 |
| R4-2 | | | | | 4 |
| R5-2 | | | | | 5 |
| R6-2 | | | | | 6 |
| R7-2 | | | | | 7 |
| R8-2 | | | | | 8 |
| R9-2 | | | | | 10 |
| R10-2 | | | | | 11 |
| R11-2 | | | | | 12 |
| R12-2 | | | | | 13 |
| R13-2 | | | | | 14 |
| R14-2 | | | | | 15 |
| R15-2 | | | | | 16 |
| R16-2 | | | | | 17 |
| R17-2 | | | | | 20 |
| R18-2 | | | | | 21 |
| R19-2 | | | | | 22 |
| R20-2 | | | | | 23 |
| R21-2 | | | | | 24 |
| R22-2 | | | | | 25 |
| R23-2 | | | | | 26 |
| R24-2 | | | | | 27 |
| R25-2 | | | | | 29 |
| R26-2 | | | | | 30 |
| R27-2 | | | | | 31 |
| R28-2 | | | | | 32 |
| R29-2 | | | | | 33 |
| R30-2 | | | | | 34 |
| R31-2 | | | | | 35 |
| R32-2 | | | | | 36 |
| 33 | | 通过钮子开关可切换power110-、power24-、置空 | | | 9 |
| 34 | | 18 |
| 35 | | 28 |
| 36 | | 37 |
| IO  （输入） | 1 | 橡胶孔 | IN-2 | 1，R33-1 | | | | |  | POWER1-110V  DI  （37芯公） | -  6 |
| 2，R34-1 | | | | |  |
| 3，R35-1 | | | | |  |
| 4，R36-1 | | | | |  |
| 5，R37-1 | | | | |  |
| 6，R38-1 | | | | |  |
| 7，R39-1 | | | | |  |
| 8，R40-1 | | | | |  |
| 9，R41-1 | | | | |  |
| 10，R42-1 | | | | |  |
| 11，R43-1 | | | | |  |
| 12，R44-1 | | | | |  |
| 13，R45-1 | | | | |  |
| 14，R46-1 | | | | |  |
| 15，R47-1 | | | | |  |
| 16，R48-1 | | | | |  |
| 17，R49-1 | | | | |  |
| 18，R50-1 | | | | |  |
| 19，R51-1 | | | | |  |
| 20，R52-1 | | | | |  |
| 21，R53-1 | | | | |  |
| 22，R54-1 | | | | |  |
| 23，R55-1 | | | | |  |
| 24，R56-1 | | | | |  |
| 25，R57-1 | | | | |  |
| 26，R58-1 | | | | |  |
| 27，R59-1 | | | | |  |
| 28，R60-1 | | | | |  |
| 29，R61-1 | | | | |  |
| 30，R62-1 | | | | |  |
| 31，R63-1 | | | | |  |
| 32，R64-1 | | | | |  |
| R33-2 | | | | | 1 |
| R34-2 | | | | | 2 |
| R35-2 | | | | | 3 |
| R36-2 | | | | | 4 |
| R37-2 | | | | | 5 |
| R38-2 | | | | | 6 |
| R39-2 | | | | | 7 |
| R40-2 | | | | | 8 |
| R41-2 | | | | | 10 |
| R42-2 | | | | | 11 |
| R43-2 | | | | | 12 |
| R44-2 | | | | | 13 |
| R45-2 | | | | | 14 |
| R46-2 | | | | | 15 |
| R47-2 | | | | | 16 |
| R48-2 | | | | | 17 |
| R49-2 | | | | | 20 |
| R50-2 | | | | | 21 |
| R51-2 | | | | | 22 |
| R52-2 | | | | | 23 |
| R53-2 | | | | | 24 |
| R54-2 | | | | | 25 |
| R55-2 | | | | | 26 |
| R56-2 | | | | | 27 |
| R57-2 | | | | | 29 |
| R58-2 | | | | | 30 |
| R59-2 | | | | | 31 |
| R60-2 | | | | | 32 |
| R61-2 | | | | | 33 |
| R62-2 | | | | | 34 |
| R63-2 | | | | | 35 |
| R64-2 | | | | | 36 |
| 33 | 通过钮子开关可切换power110-、power24-、置空 | | | | 9 |
| 34 | 18 |
| 35 | 28 |
| 36 | 37 |
| 速传 | 1 | 橡胶孔 | Speed | 1-power，速传转接板-24V+ | | | | |  | - | - |
| 2-out，速传转接板-out1 | | | | |  |
| 3-gnd，速传转接板-GND | | | | |  |
| 4-power，速传转接板-24V+ | | | | |  |
| 5-out，速传转接板-out2 | | | | |  |
| 6-gnd，速传转接板-GND | | | | |  |
| 7-power，速传转接板-24V+ | | | | |  |
| 8-out，速传转接板-out3 | | | | |  |
| 9-gnd，速传转接板-GND | | | | |  |
| 电源 | 1 | 橡胶孔 | POWER110 | 1，2，3，4，5，6，7，8  9，10，11，12，13，14，15，16 | | | | | POWER1+ | POWER1-110V  （冗余橡胶插孔） | - |
| 17，18，19，20 | | | | | POWER1- |
| 电源 | 1 | 橡胶孔 | POWER24 | 1，2，3，4，5，6，7，8  9，10，11，12，13，14，15，16 | | | | | POWER2+ | POWER1-24V  （冗余橡胶插孔） | - |
| 17，18，19，20 | | | | | POWER2- |
| 串口 | 1 | D-sub9 | Serial | 1 | | | | | COM1-1 | 串口通信卡  （DB9公） | 7 |
| 2 | | | | | COM1-2 |
| 3 | | | | | COM1-3 |
| 4 | | | | | COM1-4 |
| 5 | | | | | COM1-5 |
| 6 | | | | | COM1-6 |
| 7 | | | | | COM1-7 |
| 8 | | | | | COM1-8 |
| 9 | | | | | COM1-9 |
| 串口 | 1 | D-sub9 | Serial | 1 | | | | | COM2-1 | 串口通信卡  （DB9公） | 7 |
| 2 | | | | | COM2-2 |
| 3 | | | | | COM2-3 |
| 4 | | | | | COM2-4 |
| 5 | | | | | COM2-5 |
| 6 | | | | | COM2-6 |
| 7 | | | | | COM2-7 |
| 8 | | | | | COM2-8 |
| 9 | | | | | COM2-9 |
| 串口 | 1 | D-sub9 | Serial | 1 | | | | | COM1-1 | 串口通信卡  （DB9公） | 7 |
| 2 | | | | | COM1-2 |
| 3 | | | | | COM1-3 |
| 4 | | | | | COM1-4 |
| 5 | | | | | COM1-5 |
| 6 | | | | | COM1-6 |
| 7 | | | | | COM1-7 |
| 8 | | | | | COM1-8 |
| 9 | | | | | COM1-9 |
| 串口 | 1 | D-sub9 | Serial | 1 | | | | | COM2-1 | 串口通信卡  （DB9公） | 7 |
| 2 | | | | | COM2-2 |
| 3 | | | | | COM2-3 |
| 4 | | | | | COM2-4 |
| 5 | | | | | COM2-5 |
| 6 | | | | | COM2-6 |
| 7 | | | | | COM2-7 |
| 8 | | | | | COM2-8 |
| 9 | | | | | COM2-9 |
| CAN | 1 | 橡胶孔 | CANA | 1 | | | | 跨接120Ω电阻 | 2 | CAN通信卡1 | 8 |
| 2 | | | | 1 |
| CAN | 1 | 橡胶孔 | CANB | 1 | | | | 跨接120Ω电阻 | 6 |
| 2 | | | | 5 |
| CAN | 1 | 橡胶孔 | CANC | 1 | | | | 跨接120Ω电阻 | 2 | CAN通信卡2 | 9 |
| 2 | | | | 1 |
| CAN | 1 | 橡胶孔 | CAND | 1 | | | | 跨接120Ω电阻 | 6 |
| 2 | | | | 5 |
| PWM | 1 | 橡胶孔 | PWM | 1 | | | | | 1 | - | - |
| 2 | | | | | 2 |
| 电流环 | 1 | 橡胶孔 | 电流环 | 1 | | | | | 1 | - | - |
| 2 | | | | | 2 |

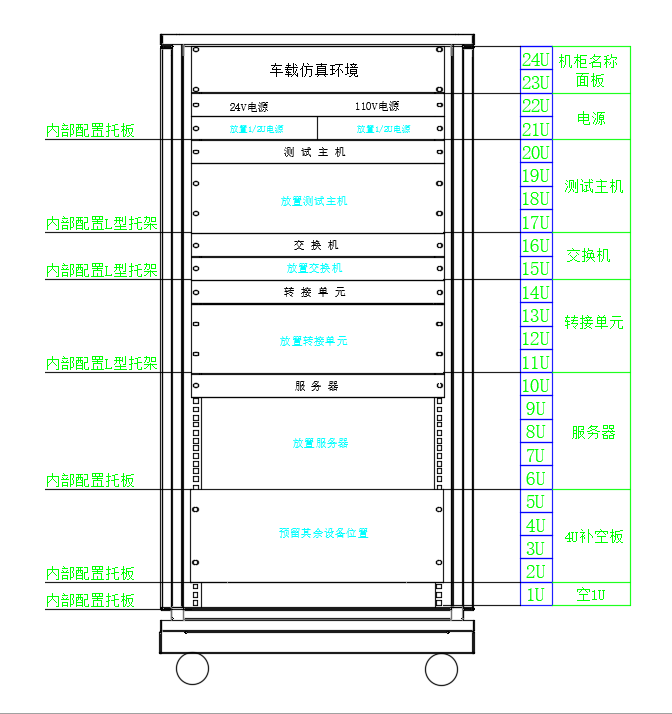
技术要求：

1. 上表中转接箱连接被测设备的接插件选用橡胶孔，转接箱连接主机的DO连接器选择D-sub37芯母头，DI连接器选择D-sub37芯公头，CAN连接器选择D-sub25芯公头，串口连接器选择D-sub9公头
2. 转接箱内部需要增加速度转接板、信号采集板，设计院提供
3. 测试主机上丝印“车载整机测试单元”
4. 测试主机线缆连接至转接箱后面板，被测设备的线缆连接至转接箱前面板
5. 可配套制作一台小型机柜，用于安装1台测试主机，1台车载整机测试单元，2台1/2U单元，1台1U交换机
6. 测试主机和车载整机测试单元在机柜内上下靠近放置，中间预留1U空间，使用毛刷孔穿线
7. 外部配线一端连接被测设备，一端连接车载整机测试单元，航插头院里提供，线缆包括42芯重载线缆4根（重载插头-橡胶插头），CAN通信线缆6根（航插头-橡胶插头）、MVB屏蔽线缆（1、2、4、5直连，连接被测设备和测试主机）、串口线缆2根（航插头-DB9、DB9-DB9（接线定义后续提供）），PWM线缆1根（航插头-橡胶插头），电流环线缆1根（航插头-橡胶插头）
8. CANA→X5-1/X6-1
9. CANB→X5-2、X9-1、X9-2、X12-1、X8
10. CANC→X6-2、X10-1、X10-2、X12-2、X8

配件

|  |  |  |  |
| --- | --- | --- | --- |
| 名称 | 用途 | 数量 | 连接关系 |
| 跨接线 | 连接测试主机和车载整机测试单元DI、DO | 5 | 37芯转37芯，DI(公对公)，DO(母对母) |
| MVB终端 | D-sub9短接（5、9），（4、8），（2、7），（1、6） | 4 | D-sub9公、母各两支 |
| USB-hub | 扩展主机USB接口 | 1 | 航插1-9对应speed10-18 |
| 交换机 | 扩展主机以太网接口 | 1 | 院里可提供，需要制作固定结构件 |
| USB线缆 | 连接USB-hub至车载整机测试单元 | 2 | USB-A转USB-A |

1. **机柜指数技术指标**



1.机柜尺寸：19英寸（600\*800\*1200）24U

2.预留4U空位备用

3.最底部内部配有托板，便于测试完成后重载测试线缆收纳

4.交换机和转接单元名称挡板左右设置穿线孔，加装护线胶圈