AI 0 C
AI 1 C

DI 0 1 C

DO 0 C P
DO 1 C P

circuit of signal pre-amplification and conversion

circuit of galvanic isolation

circuit of galvanic isolation and transistor control

PB0   PB1

PA8   PB15

PA0   PA1

SYSTEM LOADER

CH1.PWM   CH2.PWM

PA15.EXTI.IRQ
PA14.EXTI.IRQ
ADC1.IRQ
USART1.IRQ

INTERRUPT CONTROLLER

IRQ   callback

TIM2   TIM5

DI

AI

APP

ADC.DATA
USART1.DATA
USART1.RE

TARGET SYSTEM

DO

STR0.CH0

DMA2   ADC1
IN8   IN9

ADC1.IRQ
ADC1.DATA

DMA1

USART2.IRQ

USART2.DATA
USART2.RE

MODBUS

LED

PC13
PB14
PB13
PB12

circuit of LED control

USER
RUN
ERR
NET
POWER

STR7.CH4   STR2.CH4

USART1.DATA
USART1.IRQ
USART1.RE

STR6.CH4   STR5.CH4

USART1
TX   RX   RE

USART2
TX   RX   RE

data registers

USER CONTROL PROGRAM

STM32F411CE
ARM Cortex-M4

PA9   PA10   PA11

PA2   PA3   PA4

BOOT0   GND   VCC

NRST   VCC   GND

circuit of galvanic isolation and RS485 interface

circuit of galvanic isolation and RS485 interface

RUN
BOOT

circuit of reset

circuit of power conversion

COM.1
A   B   C

COM.2
A   B   C

RESET

POWER
+   -

PLC411.1

LEGEND

ADC1.IRQ — signal transmission (from left to right)

USART1.DATA — signal transmission (from left to right or from right to left)

USART1.RE — signal transmission (from right to left)