

纳芯微5G电源解决方案

为业界提供更小尺寸, 更高性能, 更可靠的一站式隔离与驱动芯片解决方案

站点电源解决方案

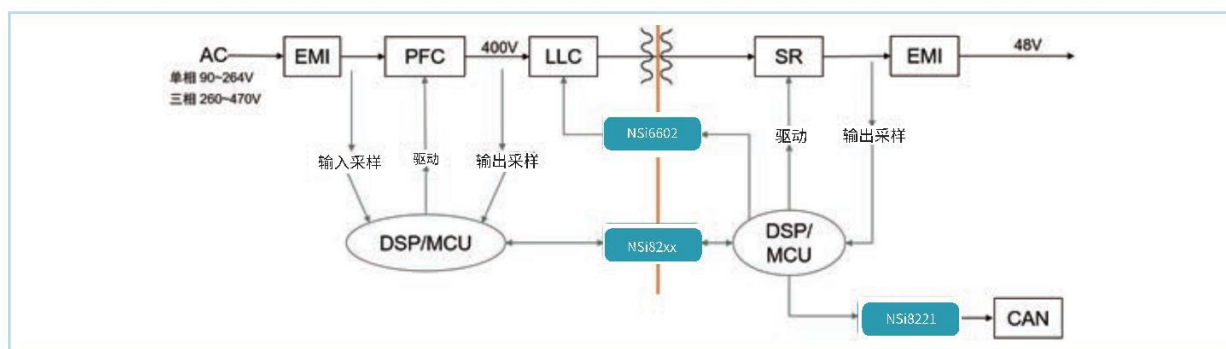
► 监控部分

站点监控设备对外一般用隔离485通信,可通过3通道数字隔离器NSi8131S+485收发器或隔离485芯片NSi83085实现;对内用隔离CAN通信,可通过2通道数字隔离NSi8121N+CAN收发器或隔离CAN芯片NSi1050实现。为实现智能控制和精准备电,可以选择I²C转I/O的芯片NCA9555来控制各级设备的下电(BLVD/LLVD及其它OFF信号),以节约芯片资源。

	Part No.	Iso Rating (kV _{RMS})	Forward/Reverse Channels	Max DataRate (Mbps)	Default Output		AEC-Q100	Package Type	
					LOW	HIGH			
Triple Channel	NSi8131Sx	3	2/1	150	√	√		SSOP-16	
Dual Channel	NSi8221Nx	3.75	1/1	150	√	√	√	SOIC-8N	
	Part No.	Duplex	Iso Rating (kV _{RMS})	ESD	Max DataRate (Mbps)	No. of Nodes	Fail Safe	Operating Temperature Range (°C)	Package Type
RS-485	NSi83085	Half	5	16	0.5	256	Idle, Open, Short	-40~105	SOIC-16W
CAN	NSi1050	NSi1050-DDBR	3	8	1	110	Idle, Open, Short	-40~125	DUB-8
	NSi1050	NSi1050-DSWR	5	8	1	110	Idle, Open, Short	-40~125	SOIC-16W
	Part No.	Channel	VCC(min) (V)	VCC(max) (V)	Frequency (Max) (kHz)	Addresses	Features	Operating Temperature Range (°C)	Package Type
I ² C GPIO Expander	NCA9555	16	2.3	5.5	400	3	Interrupt Pin LED Driver	-40~85	TSSOP24

► 电源部分

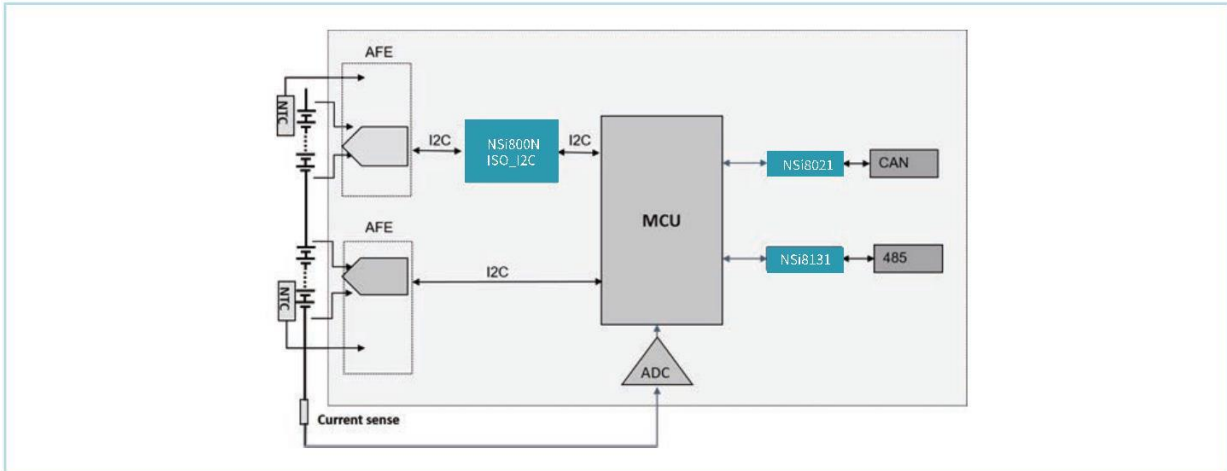
AC-DC电源通常需要两级拓扑:PFC+LLC,且都需要闭环控制,通常会采用两颗主控芯片,原边的主控负责PFC电路,副边主控负责LLC电路,两颗MCU之间通过数字隔离实现信息交互。LLC的驱动通过隔离驱动NSi6602或者数字隔离NSi8120+驱动器的方式实现。原边PFC电路通常选择交错Boost或图腾柱无桥PFC,交错式通过双低边驱动实现,图腾式通过高压半桥驱动NSi6602+单管驱动实现。PSU对外接口一般选择CAN通信。输入电流采样可以选用隔离采样芯片NSi1300,以减小传统CT电流采样的占板面积。



	Part No.	Iso Rating (kV _{RMS})	Peak Source/Sink Output Current (A)	Driver-side UVLO (V)	Propagation Delay (ns) (Typ.)	CMTI (kV/μs)	Operating Temperature Range (°C)	Package Type	
Dual Channel Isolated Gate Driver	NSi6602B-DSWR	5	4/6	8	19	100	-40~125	SOIC-16W	
Single Channel Isolated Gate Driver	NSi6601B-DSPR	3	5/5	9	70	100	-40~125	SOIC-8N	
	Part No.	Iso Rating (kV _{RMS})	Linear Input Range(mV)	Input Type	Output Type	CMTI (kV/μs)	AEC-Q100	Operating Temperature Range (°C)	Package Type
Isolated Amplifier	NSi1300D05	5	-50~50	Differential	Differential	100	√	-40~125	SOIC-8W
	NSi1300D25	5	-250~250	Differential	Differential	100	√	-40~125	SOIC-8W

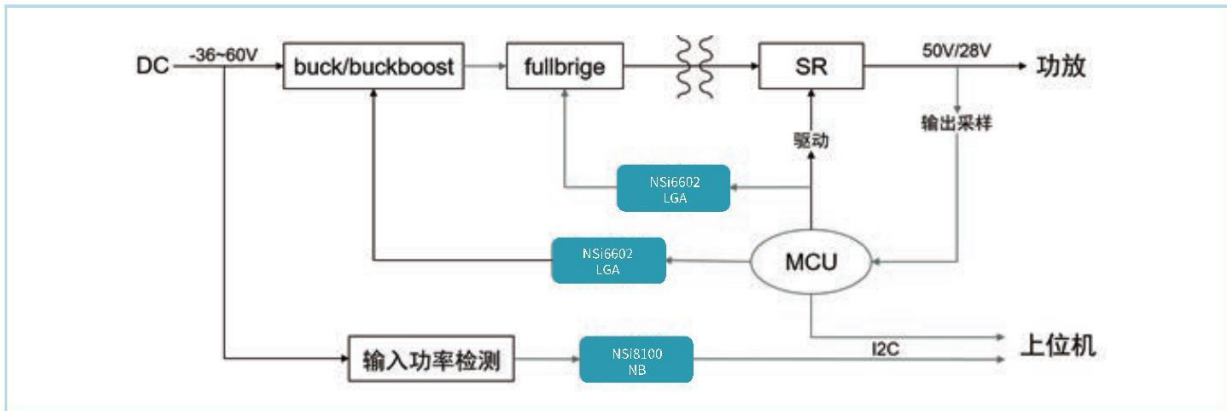
▶ 备电部分

电芯包采样部分,大多数厂家会选择成熟的AFE芯片来做电芯电压采样和均衡,基站备电的电芯数一般为16串,所以部分需要2PCS AFE芯片,其中一颗AFE芯片需要通过NSI8100N来连接,如下图所示:



基站电源解决方案

给功放供电的DCDC电路拓扑架构如下图所示,TRX和BBU的DCDC电路在下图基础上去掉buck/buckboost这一级电路即可。功放电路的全桥一般是开环,TRX和BBU电路的全桥是闭环,但环路控制都从最后的输出电压采样,主控芯片一般放在副边,方便与上位机通信。纳芯微提供集成隔离驱动和隔离器+驱动一站式解决方案。针对功率上报的需求,纳芯微提供I²C隔离器NSI8100做上位机通信。对于BBU这种插板式架构,还需要I²C热插拔芯片NCA9511来保证板和板之间的信号传输质量。



	Part No.	Iso Rating (kVRMS)	Peak Source/Sink Output Current (A)	Driver-side UVLO (V)	Propagation Delay (ns) (Typ.)	CMTI (kV/μs)	Operating Temperature Range (°C)	Package Type	
Dual Channel Isolated	NSI6602A-DLAR	2.5	4/6	6	19	100	-40~125	LGA-13	
	NSI6602B-DLAR	2.5	4/6	8	19	100	-40~125	LGA-13	
	NSI6602C-DLAR	2.5	4/6	13	19	100	-40~125	LGA-13	
	Part No.	Iso Rating (kVRMS)	ESD	Bidirectional Channels	Max DataRate (Mbps)	No. of Nodes	AEC-Q100	Operating Temperature Range (°C)	Package Type
I ² C	NSI8100N	3.75	6	2	4	112	√	-40~125	SOIC-8N
	Part No.	VCC1(min)(V)	VCC1(max)(V)	VCC2(min)(V)	VCC2(max)(V)	Frequency (Max) (kHz)	Operating Temperature Range (°C)	Package Type	
Hot Swappable Buffer	NCA9511	2.3	5.5	2.3	5.5	400	-40~85	MSOP8	
	NCA9511	2.3	5.5	2.3	5.5	400	-40~85	SOP8	



关注纳芯微

