

RFX105 5G RF Front End

Versatile and scalable 3U open architecture

- VITA 48.2 3U form factor, 1" slot pitch, OpenVPX and SOSA Compliant
- Rugged and Compact
- Coverage configurable* over n77, n78 and n79 for 5G 4x4 MIMO
- Fully compatible with the NewEdge RUX105 5G SDR module

The RFX105 5G RFFE is in a VITA 48.2 3U form factor, 1" slot pitch. This RFFE is fully compatible with the newly released NewEdge RUX105 SDR. The design allows for high power 4T4R 5G MIMO in the same chassis as the SDR module.

With appropriate filtering, high power MIMO operation over the 5G bands n77, n78 and n79, thereby enabling next-generation communications platforms with SOSA - aligned capabilities.

The module is designed for use in a conduction cooled VITA compliant chassis with variants for air-cooled systems, creating a broader spectrum of usability for greater performance in rugged, deployed environments. configurable by the RUX105.

An RTM is available for use in development chassis.

Details on software implementation and interfacing are available on request.

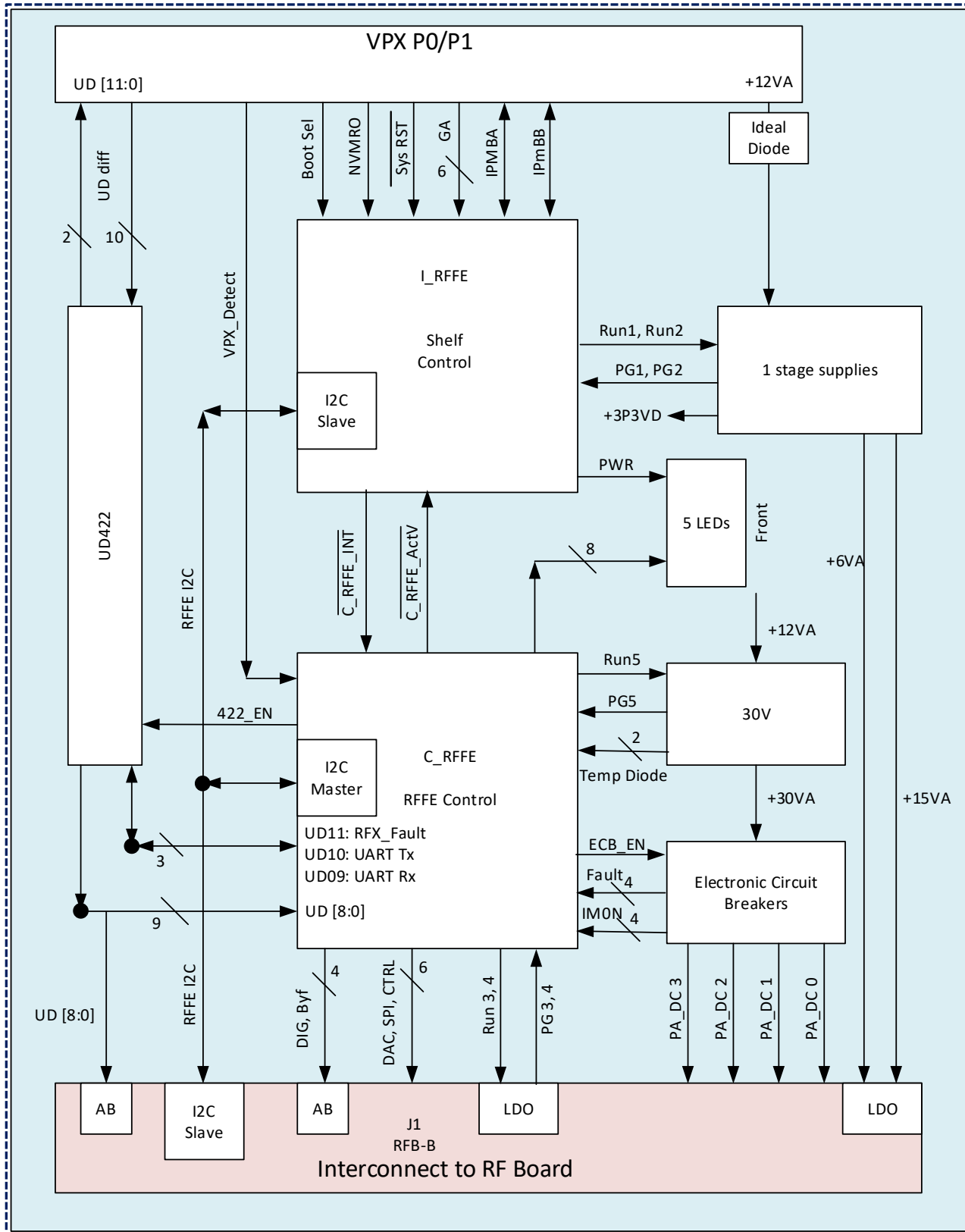


NewEdge is a leading provider of RFFE subsystems designed and made in the USA

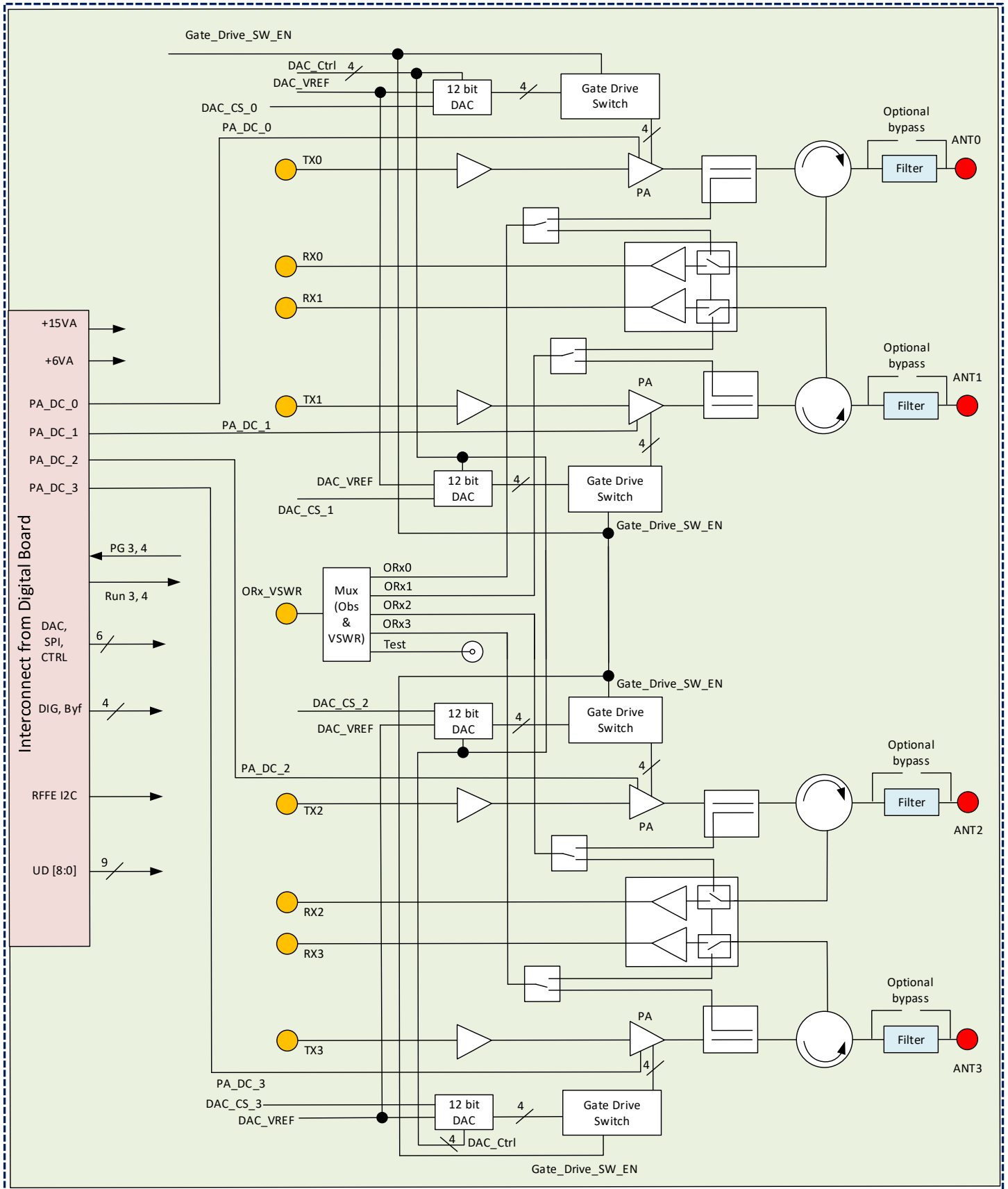
NewEdge Signal Solutions Proprietary Information 2024



Block Diagram: Main Board Digital Control and Communications



Block Diagram: Plugin Mezzanine Board RF Transmit / Receive



Backplane Connectivity: PO, P1

Green text or cells indicate connection

P0 Utility Connector

	Wafer Type	Row G	Row F	Row E	Row D	Row C	Row B	Row A
1	Power	Vs1	Vs1	Vs1	No Pad	Vs2	Vs2	Vs2
2	Power	Vs1	Vs1	Vs1	No Pad	Vs2	Vs2	Vs2
3	Power	Vs3	Vs3	Vs3	No Pad	Vs3	Vs3	Vs3
4	Single-ended	SM 2	SM 3	NC	-12V_AUX	VPXDETECT	SYSRESET*	NVMRO
5	Single-ended	GAP*	GA4*	GND	3.3V_AUX	GND	SM 0	SM 1
6	Single-ended	GA3*	GA2*	GND	+12V_AUX	GND	GA1*	GA0*
7	Differential	TCK	GND	TDO	TDI	GND	TMS	TRST*
8	Differential	GND	REF_CLK-(NC)	REF_CLK+(NC)	GND	AUX_CLK-(NC)	AUX_CLK+(NC)	GND

P1 /J1 Pinout

Plug-in module P1	Row G	Row F	Row E		Row D	Row C	Row B		Row A
			Even	Odd			Even	Odd	
Backplane J1	Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	Gdiscrete1	GND	GND-J1	NC	NC	GND	GND-J1	NC	NC
2	GND	NC	NC	GND-J1	GND	NC	NC	GND-J1	GND
3	P+VBAT	GND	GND-J1	NC	NC	GND	GND-J1	NC	NC
4	GND	NC	NC	GND-J1	GND	NC	NC	GND-J1	GND
5	SYS_CON*	GND	GND-J1	DPutp0+TD- (NC)	DPutp0+TD+ (NC)	GND	GND-J1	DPutp0+RD- (NC)	DPutp0+RD+ (NC)
6	GND	NC	NC	GND-J1	GND	NC	NC	GND-J1	GND
7	Reserved	GND	GND-J1	NC	NC	GND	GND-J1	NC	NC
8	GND	CPutp0+TD- (NC)	CPutp0+TD+ (NC)	GND-J1	GND	CPutp0+RD- (NC)	CPutp0+RD+ (NC)	GND-J1	GND
9	MP0+TD (NC)	GND	GND-J1	UD00-TD-	UD00-TD+	GND	GND-J1	UD01-TD-	UD01-TD+
10	GND	UD02-TD-	UD02-TD+	GND-J1	GND	UD03-TD-	UD03-TD+	GND-J1	GND
11	MP0+RD (NC)	GND	GND-J1	UD04-TD-	UD04-TD+	GND	GND-J1	UD05-TD-	UD05-TD+
12	GND	UD06-TD-	UD06-TD+	GND-J1	GND	UD07-TD-	UD07-TD+	GND-J1	GND
13	BOOT_SEL	GND	GND-J1	UD08-TD-	UD08-TD+	GND	GND-J1	UD09-TD-	UD09-TD+
14	GND	UD10-RD-	UD10-RD+	GND-J1	GND	UD11-RD-	UD11-RD+	GND-J1	GND
15	Maskable Reset	GND	GND-J1	DPutp02-TD- (NC)	DPutp02-TD+ (NC)	GND	GND-J1	DPutp02-RD- (NC)	DPutp02-RD+ (NC)
16	GND	CPutp02-TD- (NC)	CPutp02-TD+ (NC)	GND-J1	GND	CPutp02-RD- (NC)	CPutp02-RD+ (NC)	GND-J1	GND

Specifications

Packaging

Format/Size: 3U VPX, 1" slot pitch
 Weight: <0.8kg (rugged conduction cooled)

Power

Voltage: 12 V
 Power: less than 60W

RF Specifications

Compliance: 3GPP compliant
 RF Coverage: 3.3 GHz to 5 GHz *
 MIMO: 4X4
 RF Tx power: Up to 5 W (37 dBm) **
 Duplex: TDD ***
 Channel bandwidths: 20, 40, 60 and 100 MHz
 ACLR: >45 dBc

Connectivity

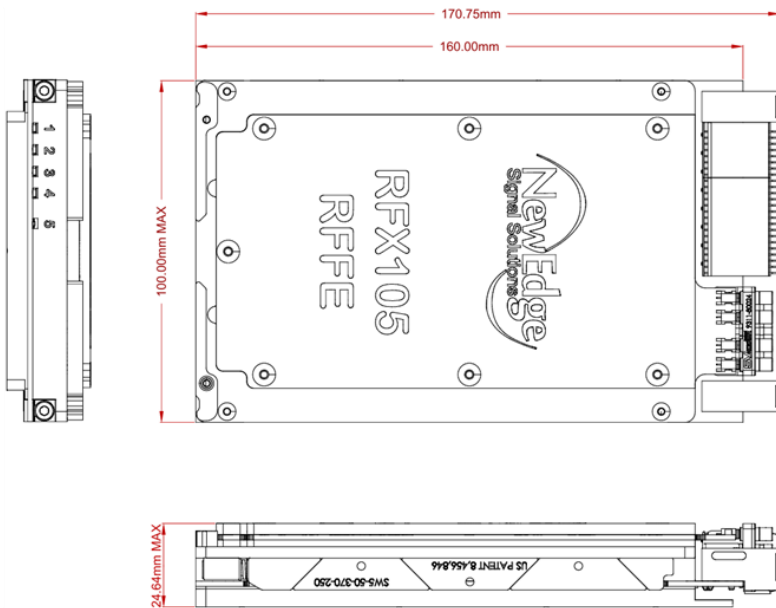
Control: Configurable by RUX105 UD serial comms
 RF to/from RUX105: 50 Ω 4xTx, 4xRx 67.3C SMPM
 DPD Obs: 50 Ω 67.3C SMPM
 Antenna: 50 Ω 4xTxRx 67.3C SMPM

Environmental

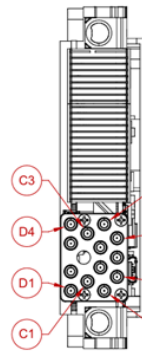
Operational: Class CC3
 Non-operational: Class C4
 Standards: MIL-STD-810



- * Operational frequency options available
- ** Dependent on CFR configuration, 37 dBm corresponds to a PAPR of ~ 8 dB
- *** May be customised for FDD



Pinout to / from the 67.3CAperture H block.



	Signal	Location
SDR Coaxial Cable Connection	TX0	A1
	TX1	B1
	TX2	B2
	TX3	C1
	OBS / VSWR	A2
	RX0	A3
	RX1	B3
	RX2	B4
Antenna Connection	RX3	C3
	ANT0	D1
	ANT1	D2
	ANT2	D3
	ANT3	D4

Need more help? Need a different Band? Power Level?
 Contact the NewEdge team at: info@newedges2.com

Corporate Headquarters

100 Innovative Way, Suite 3400, Nashua, NH 03062 USA