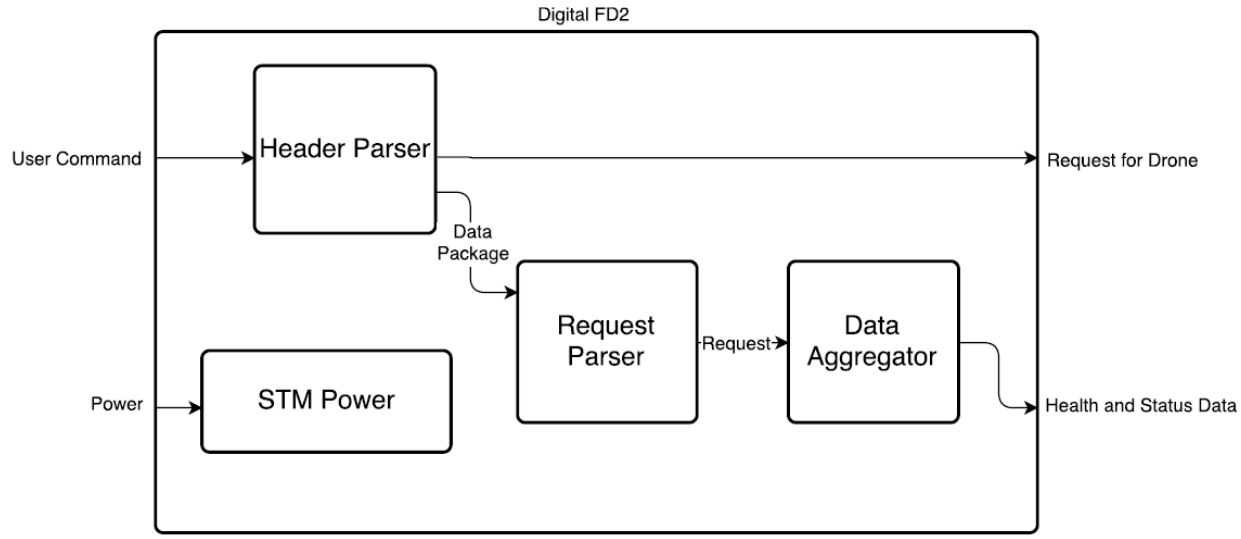
Functional Decomposition (Level 2)

Phase Factor

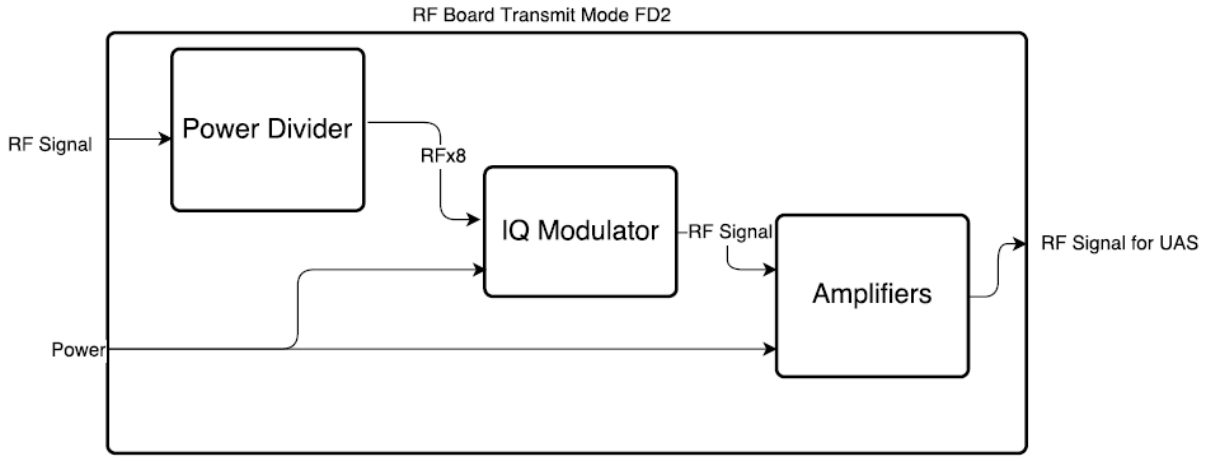


Module	Header Parser
Inputs	• User Command
Outputs	• Request for UAS • Data package for request parser
Functionality	The header parser examines the user command and pulls off the header. It then determines what interface the package was intended for and sends it onward accordingly.

Module	Request Parser
Inputs	• Data Package
Outputs	• Request
Functionality	The request parser will take data packages intended for the phased array and determines how to adjust the system accordingly.

Module	Data Aggregator
Inputs	• Data Request
Outputs	• Health and Status Report
Functionality	The data aggregator collects data from its sensors and packages the data into a health and status report which is then sent back to the user.

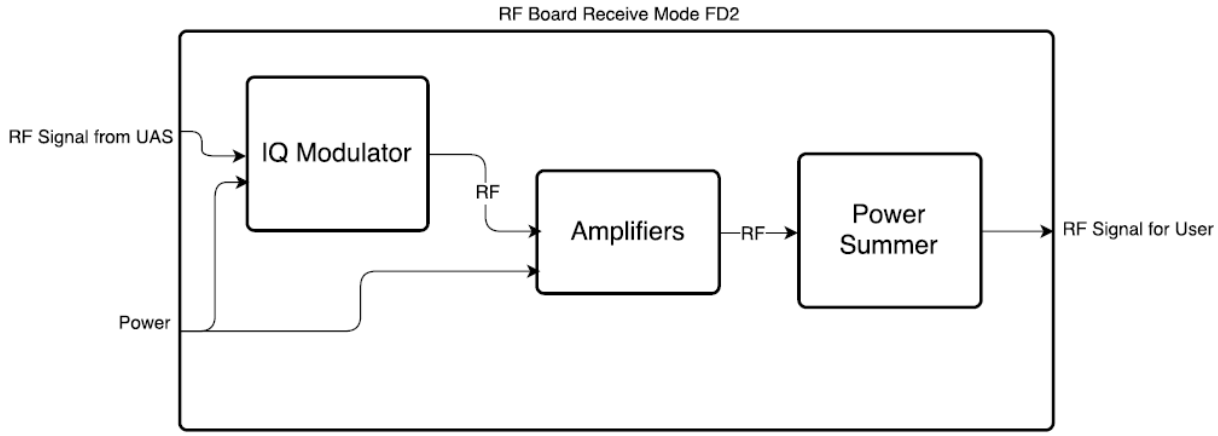
Module	STM Power
Inputs	• Power
Outputs	None
Functionality	The power will service the STM and keep it running so that all the other functions can be fulfilled.



Module	Power Divider
Inputs	• RF Signal
Outputs	• RFx8
Functionality	The power divider splits up the RF signal into 8 slices to prepare it for further management.

Module	IQ Modulators
Inputs	• RF Signal • Power
Outputs	• RF signal (modified)
Functionality	The IQ modulators alter the phase and amplitude of the signal, necessary for creating a directed beam. There are 8 of these responsible for transmission.

Module	Amplifiers
Inputs	• RF Signal • Power
Outputs	• Amplified or attenuated RF Signals
Functionality	This takes the 8 RF inputs and then amplifies the signal



Module	IQ Modulators
Inputs	• RF Signal from UAS • Power
Outputs	• RF signal
Functionality	The IQ modulators alter the phase and amplitude of the signal, necessary for receiving a directed beam. There are 8 of these responsible for receiving the signal (distinct from the transmission IQ modulators).

Module	Amplifiers
Inputs	• RF Signal • Power
Outputs	• Amplified RF Signal
Functionality	This takes the 8 RF inputs and then amplifies the signals

Module	Power Summer
Inputs	• RF Signals x8
Outputs	• Reconstructed RF signal
Functionality	The power summer takes the 8 RF signals, and sums them into one RF signal to be sent to the SDR.