

FCC ID:2ALN6400

New generation hub operational description

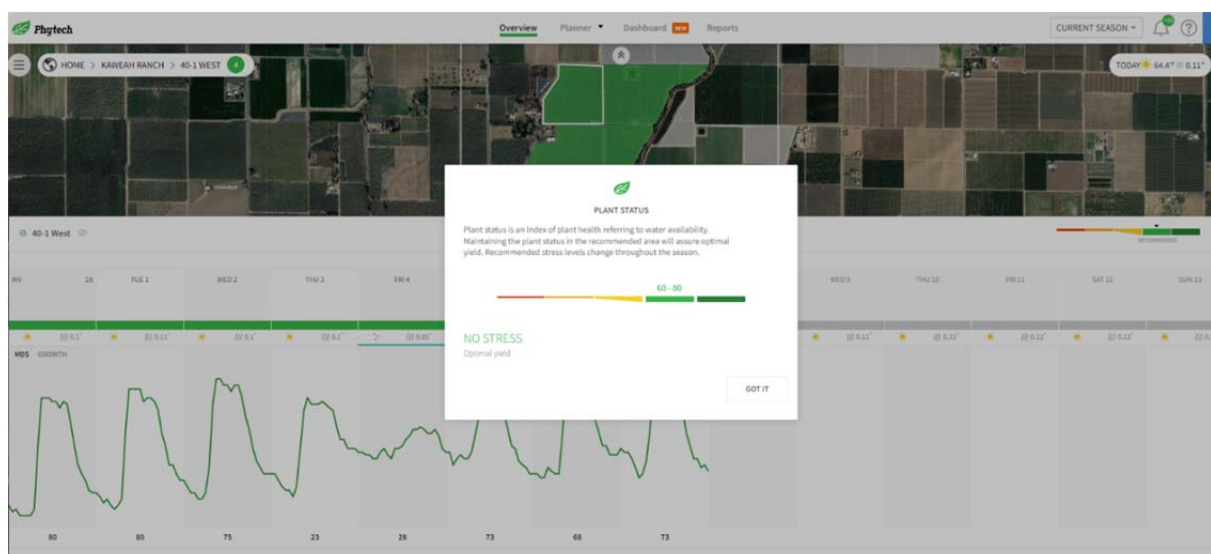


General description

Phytech hub is part of an advanced AG IoT platform for optimized Irrigation management. Firstly, the device receives Phytech Plant sensor measurements. Then, the hub organizes the data and then sends it to a Phytech datalogger. Finally, the data is sent to the Phytech cloud for analysis and processing. The outcome is a simple color scheme that aids the grower to decide online when and how much to irrigate.

Received data

The data received from the sensors reaches the server where it is analyzed. The analyzed data provides users plant status and irrigation recommendations via web and mobile apps



:Functional specification

Parameter	Description	Min	Typ	max	Unit
Power	Power source		xC2		Alkaline Bat
	Battery capacity		4000		mAH
	Discharge in one year storage		70		mAH
	Number of working months (after one year of storage)		40.1		months
	Operating voltage	2.6	3	3.2	volt
GPS	UBLOX IC GPS receiver		-MAX 0--M8C 10		
	Antenna Gain		3-		dBi
	Antenna Type		CERAMIC PATCH ANTENNA		AMOTEC
Communication	Rf range	400	600	1000	m
	frequency		433.82		MHz
	Number of sensors per Hub		48		
Memory	historical data		300		hours
Environment	Enclosure ratings		IP65		standard
	temperature Ambient min/max	40-		85	C°
FOTA	FW over the air		supports remote FW update		

:Electrical specification

Parameter	Symbol	Description	Min	Typ	max	Unit
<i>Absolute Maximum Ratings</i>						
Storage temperature range	TSTG		55-	-	150	C°
Main supply voltage	VDDMAX		0.3-	-	VDD+0	V

					3.	
<i>General Operating Conditions</i>						
Operating supply voltage	VDDOP		1.8	-	3.6	V
Store current consumption			3.8		8.2	mA
Nominal Supply Voltage	VDD	2x Alkaline Battery AAA Size	2.6	3	3.2	V
Power Supply Current	IIdle	Radio OFF	3	4	4.2	mA
	ISleep	Sleep MCU&Radio	8	10	12.1	uA
	ITx	Radio Tx 20dBm	65	72	89.3	mA
	IRx	Radio Rx	18.2	20.5	21	mA
	Isd	Deep sleep	3.8	4.8	8.2	uA

:Radio specification

Type	Direction	Description	Min	Typ	Max	Unit
UHF	Tx	freq		433.82		MHz
		Pout max		20		dBm
		Pout min		0		dBm
		power step		10		dB
		Freq Dev		-/+, 2400		Hz
		Bit per sec		2400		Bit/Sec
	Rx	(BW (rx		10000		Hz
		Nosie Floor		134-		dBm
		NF		14		dB

		Receiver sensitivity		120-		dBm
		Antenna Gain		3-		dBi
		Antenna Type		Omni PCB		
	Data	Transmission package length	1	18	64	Byte
		Package length	43.33	100	253.33	ms