

GROWHOUSE - SOIL NODE

MAJOR REVISION HISTORY :

PCB REV.	SCH. REV.	DESCRIPTION	DATE
1.0	0.1	Initial Draft	20/09/2018
	0.8	Schematic Released for External Review	16/11/2018

PCB LAYER STACK-UP DETAILS

Layer	Stack up	Supplier	Type	Description	Base Thickness	Finish Thickness	Copper Coverage	er
1		Electra	Soldermask	Electra - EMP110 Glossy			4.000	
		Circuit Foil	Copper	0.5 oz copper foil	0.660	1.860	0.000	
		Isola	Dielectric	Isola 370HR Prepreg 106	2.300	1.500	3.740	
		Isola	Dielectric	Isola 370HR Prepreg 1080	3.000	2.500	3.900	
2		Isola	Core	47 mil 1/1 370HR	1.299	1.299	60.000	4.470
					47.000	47.000		
3					1.299	1.299	30.000	
		Isola	Dielectric	Isola 370HR Prepreg 1080	3.000	2.500	3.900	
		Isola	Dielectric	Isola 370HR Prepreg 106	2.300	1.500	3.740	
4		Circuit Foil	Copper	0.5 oz copper foil	0.660	1.860	0.000	
		Electra	Soldermask	Electra - EMP110 Glossy			4.000	
Copper Thickness = 6.318 Dielectric Thickness = 54.870 Solder Mask Thickness = 2.400 Stack Up Thickness = 61.188 Stack Up Thickness with Soldermask = 63.588								

PAGE DESCRIPTION

PAGE01 : COVER PAGE
PAGE02 : BLOCK DIAGRAM
PAGE03 : ADC INTERFACE
PAGE04 : ZIGBEE/BLE MODULE
PAGE05 : POWER SUPPLY
PAGE06 : REVISION HISTORY

PCB MECHANICAL DETAILS :

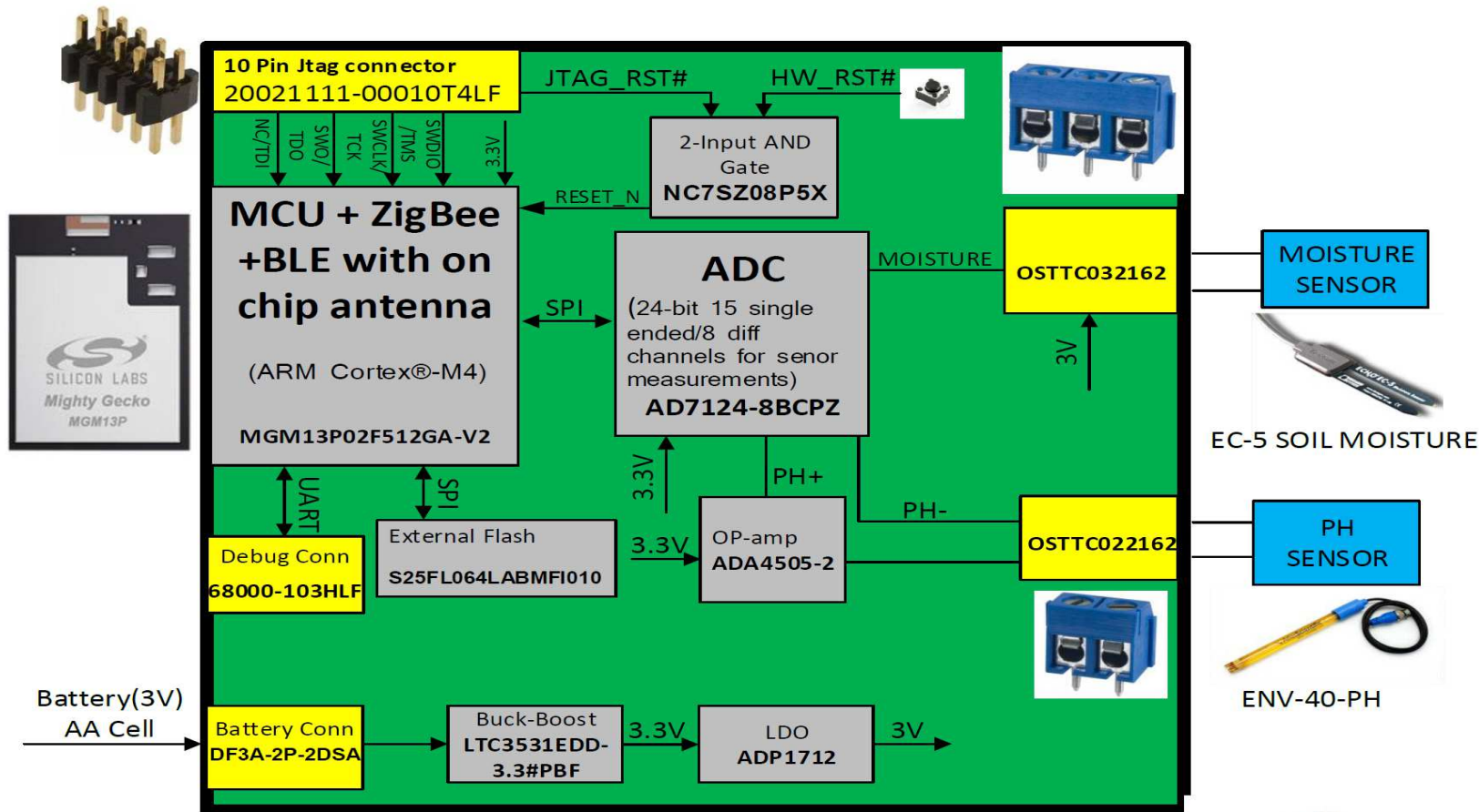
1. PCB SIZE: 50 X 55 mm
2. PCB MATERIAL: FR4
3. NUMBER OF LAYERS: 4
4. PCB THICKNESS : 1.6mm
5. IMPEDANCE CONTROL: NO

NOTES, UNLESS OTHERWISE SPECIFIED :

1. RESISTANCE VALUES ARE IN OHMS.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. PARTS NOT INSTALLED ARE INDICATED WITH 'DNP'.
4. SIGNAL NET NAMES WITH "#" SUFFIX, ARE ACTIVE LOW SIGNALS.
5. RESISTORS ARE OF 0402 SIZE AND 5% TOLERANCE UNLESS SPECIFIED OTHERWISE
6. CAPACITORS ARE OF 0402 SIZE UNLESS SPECIFIED OTHERWISE
7. ALL THE PARTS INDUSTRIAL TEMPERATURE GRADE.

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Title COVER PAGE		 The Solutions People	
Size C	eInfochips#: 16_00677_01		Rev 0.8
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BLOCK DIAGRAM



Legend

- ICs
- Sensors
- Connectors
- PCB

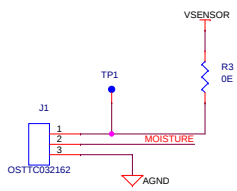


Version 0.6

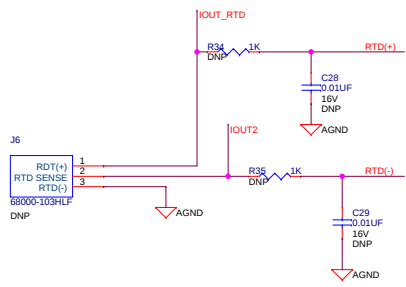
DATE:- 16/11/2018

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Title BLOCK DIAGRAM		The Solutions People	
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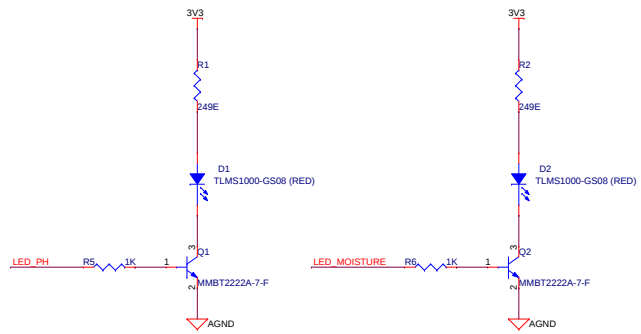
MOISTURE CONNECTION



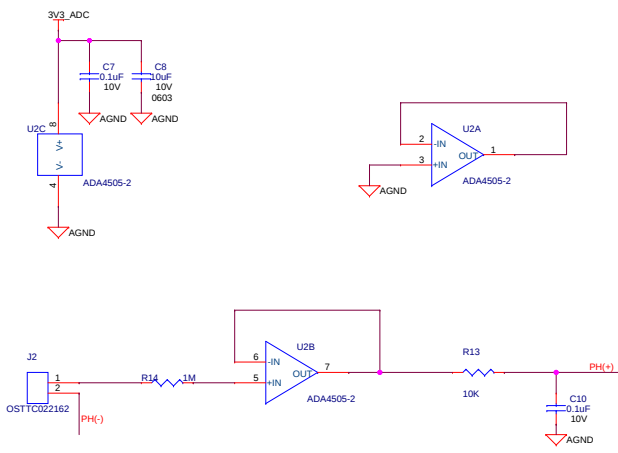
RTD CONNECTION



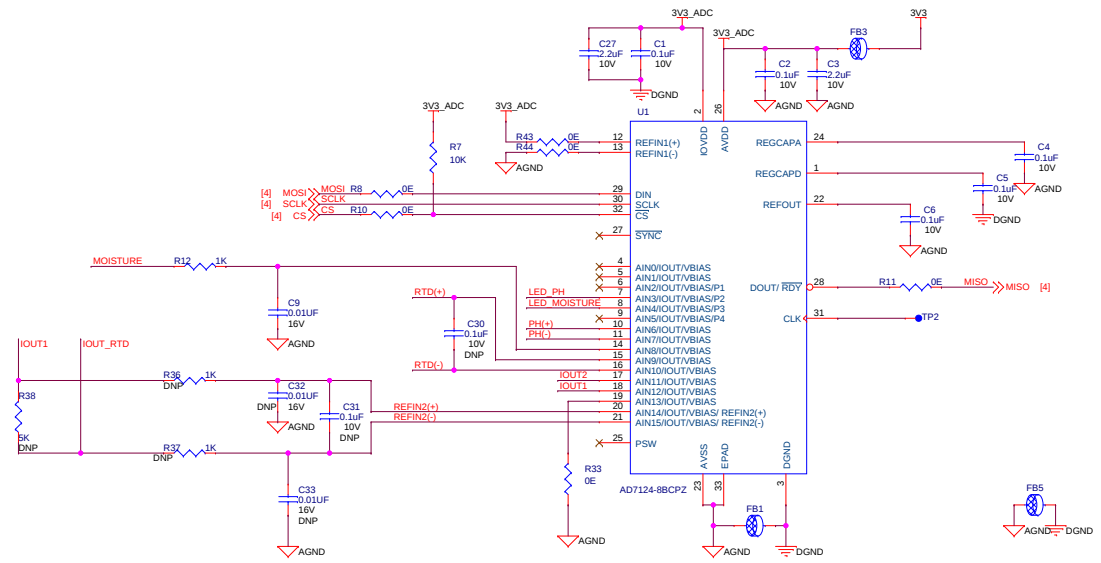
LED INDICATOR



PH CONNECTION

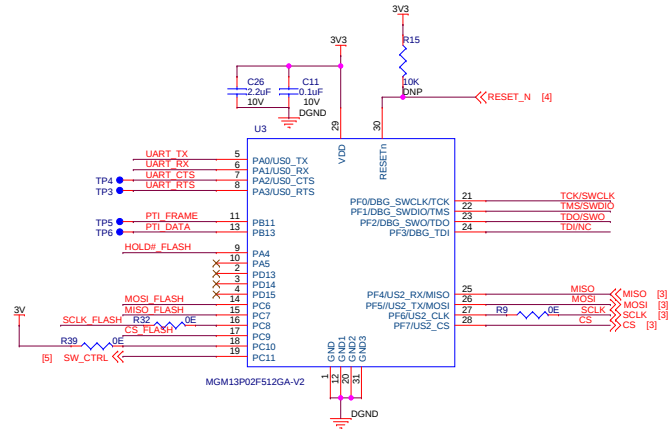


ADC CONNECTION

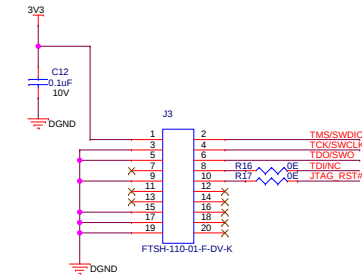


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Title ADC INTERFACE		The Solutions People	
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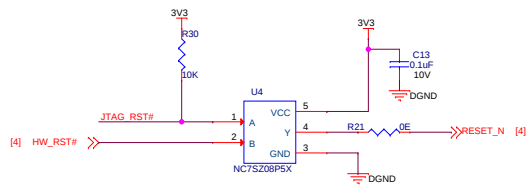
ZIGBEE/BLE MODULE



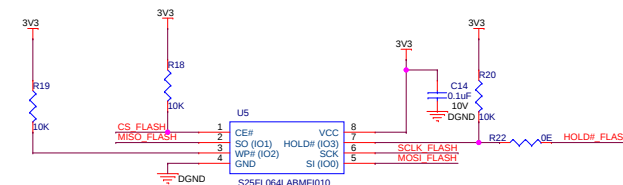
JTAG INTERFACE



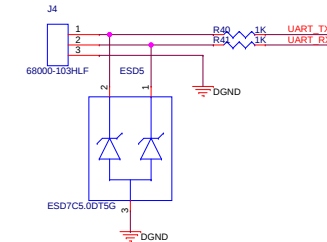
2-INPUT AND GATE



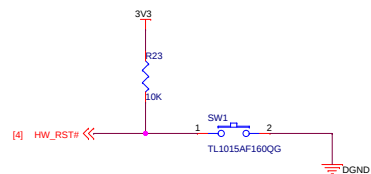
SPI FLASH FOR OTA UPGRADE



Console UART INTERFACE

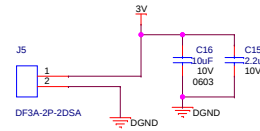


HARDWARE RESET

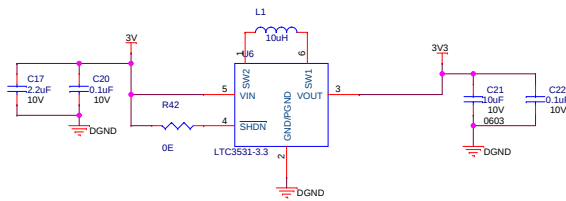


Project SOIL NODE		Designed einfochips	
Title ZIGBEE/BLE MODULE		 The Solutions People	
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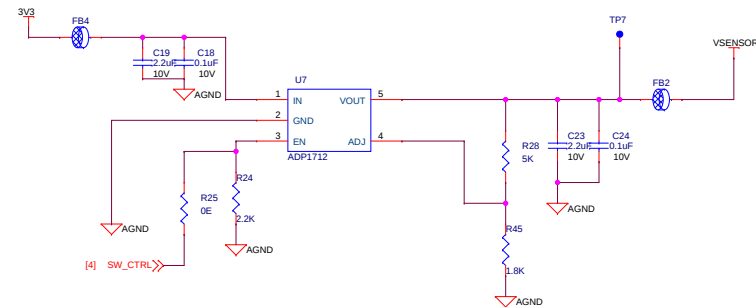
AA Battery Connector



3.3V Power supply generation



Sensor Power supply generation



Dummy Parts

DM1	DM2	DM3	DM4	DM5
ENV-40-PH	ECH20 EC-5	35FM3LS	112517-10	2463
PH- Probe	Moisture Sensor	Audio Jack	BNC Jack	Battery Holder

Project SOIL NODE		Designed eInfochips	
Title POWER SUPPLY		 The Solutions People	
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REVISION HISTORY

PCB REV	SCH REV	CHANGE DESCRIPTION	DATE	AUTHOR
1.0	0.1	Initial Draft Created	20/09/2018	
	0.2	Change the Adjacent out for U7 to 3.3V instead of fix output of 2.5V Place a ferrite bead on VSENSOR power rail. Removed LED D3 and Resistor R23. Providing GPIO to Pin# 4 of U7 to control enable pin. Add one more bulk cap of 10uF/4.7uF at J4 Connector. Add a note in the schematic at AA Battery connector. Add one decap of 0.1uF for noise filtering at both input & output power pins of U7 Change the net name of SPI connection of flash. Added 3 pin connector for uart console and its fan out.	05/10/2018	
	0.3	Place FB on ADC supplies & isolate with the local 3V3 power rail Add 10K pull up on JTAG_RSTN Signal Add 2.2uF bulk cap on IOVDD of ADC & VDD of Zigbee Module Moisture Sensor LDO must be given 3.3V input instead of 3V & change the circuit accordingly to generate 3V Add series termination resistor on SPI Clk Signals Change the SPI Flash to ISSI Part# IS25LQ040B-JNLE Swap the port of U2 for better routing Add 0 Ohm resistor at 19 pin of ADC (U1)	17/10/2018	
	0.4	Added RTD section in the schematic Change the footprint name to reference board file names	24/10/2018	
	0.5	Add Voltage measurement Pin in ADC Added Dummy part for Soil Moisture and Soil PH	26/10/2018	
	0.6	Battery Connector J5 changed to DF3A-2P-2DSA Soil Ph Connector J2 changed to OSTTC022162	29/10/2018	
	0.7	Added Ferrite Bead at U7 input Added one more ferrite Bead between AGND and DGND Added ESD and series resistor at J4 Console UART Added Zero Ohm resistor at U6 Pin 4(SHDN) and U1 Pin 12 and 13 of ADC.	05/11/2018	
	0.8	Change U2 part ADA4661-2ARMZ to ADA4505-2 Change U7 part ADP7118ACPZN-2.5 to ADP1712	16/11/2018	

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