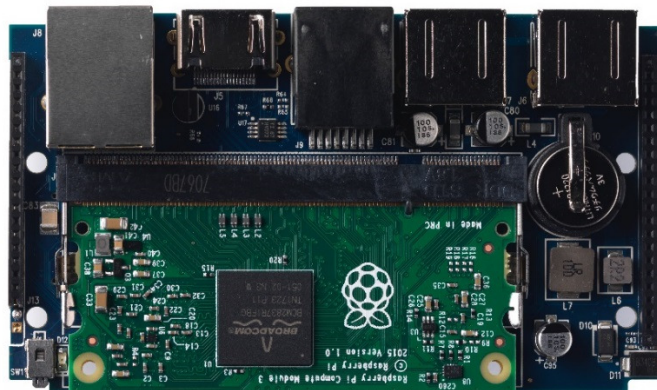


## DINGO Raspberry PI COM3 Compute Board

### Item specifications

|                         |        |  |
|-------------------------|--------|--|
| Go-IoT Item Id:         | Option | DINGO-CB-PI_COM3-01  |
| CPU                     |        | BM2837 Processor @ 1GHz  |
| RAM                     |        | 1Gbyte LPDDR2  |
| eMMC                    |        | 4Gbyte   |
| SD Holder               |        | None   |
| Ethernet                |        | 10/100 with Link / Activity LEDs<br>1 x 10 with Link / Activity LEDs   |
| USB                     |        | 1 x USB 2.0 Type A Connectors<br>2 x USB Ports to Base Board   |
| Serial Interface        |        | 1 x RS232 via RJ45 Connector<br>1 x RS485 via RJ45 Connector<br>1 x TTL Serial Debug Connector<br>2 x TTL Serial Ports to Base Board |
| HDMI Video Output       |        | 1 x HDMI Connector   |
| 1-Wire Interface        |        | 1 x 1-Wire Interface via RJ45 Connector  |
| Real Time Clock         |        | DS1339 with Battery Backup   |
| EEPROM                  |        | 24LC32 – 4K x 8  |
| I2C Ports               |        | 2  |
| SPI Ports               |        | 1  |
| Secure Authentication   | A      | NXP A7101CH  |
| Expansion Connectors    |        | 1 x 40way header to Base Board<br>1 x 20way header to Base Board<br>1 x 30way header to Display Board<br>21 x GPIO                   |
| OS                      |        | Linux Raspian  |
| DC Input                |        | +12V @ 0.3A  |
| Size (L x W x H)        |        | 101 x 60 x 19 mm   |
| Temperature             |        | -20degree C to +85degree C   |
| Country of Manufacture: |        | EU   |



## J12 – 40WAY GPIO TO BASEBOARD

| Pin | Port             | Dir | Pull Up | Function | Description                              |
|-----|------------------|-----|---------|----------|--|
| 1   | +12V             | IN  |         | POWER    | Main Power IN +12V DC                    |
| 2   | +12V             | IN  |         | POWER    | Main Power IN +12V DC                    |
| 3   | GPIO16           | OUT | NO      | RELAY 1  | Logic 1 – Activate Relay 1               |
| 4   | GPIO27           | IN  | YES     | OPTO     | Opto Input 1                             |
| 5   | GPIO17           | OUT | NO      | RELAY 1  | Logic 1 – Activate Relay 2               |
| 6   | GPIO26           | IN  | YES     | OPTO     | Opto Input 2                             |
| 7   | SPI_CLK          | OUT | NO      | SPI      | GPIO11 – SPI Clock                       |
| 8   | GPIO21           | IN  | YES     | OPTO     | Opto Input 3                             |
| 9   | SPI_MOSI         | OUT | NO      | SPI      | GPIO10 - SPI Master Out – Slave In       |
| 10  | GPIO22           | IN  | YES     | OPTO     | Opto Input 4                             |
| 11  | SPI_MISO         | IN  | NO      | SPI      | GPIO9 - SPI Master In – Slave Out        |
| 12  | GPIO23           | IN  | YES     | OPTO     | Opto Input 5                             |
| 13  | SPI_SS0          | OUT | NO      | SPI      | GPIO8 - SPI Slave Select 0 – Base Middle |
| 14  | GPIO24           | IN  | YES     | OPTO     | Opto Input 6                             |
| 15  | SPI_SS1          | OUT | NO      | SPI      | GPIO7 - SPI Slave Select 1 – Base Left   |
| 16  | GPIO12           | IN  | YES     | OPTO     | Opto Input 7                             |
| 17  | SPI_SS2          | OUT | NO      | SPI      | GPIO34 - SPI Slave Select 1 – Base Right |
| 18  | GPIO13           | IN  | YES     | OPTO     | Opto Input 8                             |
| 19  | GPIO20           | IN  | YES     | EVENT    | EVENT from N-PLC Station 1               |
| 20  | GPIO19           | IN  | YES     | EVENT    | EVENT from N-PLC Station 2               |
| 21  | GPIO37           | IN  | YES     | EVENT    | EVENT from N-PLC Station 3               |
| 22  |                  |     |         |          | spare                                    |
| 23  | TXD2             | OUT | YES     | UART     | TXD to N-PLC Stations 1, 2, 3            |
| 24  | RXD2             | IN  | YES     | UART     | RXD from N-PLC Stations 1, 2, 3          |
| 25  | +5V              | OUT |         | POWER    | +5V Output – 2A available                |
| 26  | +5V              | OUT |         | POWER    | +5V Output – 2A available                |
| 27  | GND              |     |         | POWER    | GROUND                                   |
| 28  | GND              |     |         | POWER    | GROUND                                   |
| 29  | USB_DM           |     |         |          | USB Channel 1 D- to Base Board Plug In 1 |
| 30  | USB_DP           |     |         |          | USB Channel 1 D+ to Base Board Plug In 1 |
| 31  | External Battery |     |         |          | External RTC Battery                     |
| 32  | GPIO44           | bi  | NO      |          | Spare                                    |
| 33  | I2C1_SCL         | OUT | YES     | I2C      | I2C Channel 1 Clock                      |
| 34  | I2C1_SDA         | BI  | YES     | I2C      | I2C Channel 1 Data                       |
| 35  | GPIO21           | bi  | NO      |          | Spare                                    |
| 36  | CTS3             | IN  | YES     | UART     | CTS from Baseboard – Station 2, 3        |
| 37  | TXD3             | OUT | NO      | UART     | TXD to Baseboard – Station 2, 3          |
| 38  | RXD3             | IN  | YES     | UART     | RXD from Baseboard – Station 2, 3        |
| 39  | RTS3             | OUT | NO      | UART     | RTS to Baseboard – Station 2, 3          |
| 40  | GND              |     |         | POWER    | GROUND                                   |

## J13 – 20WAY GPIO TO BASEBOARD

| Pin | Port     | Dir | Pull Up | Function | Description                              |
|-----|----------|-----|---------|----------|--|
| 1   | +3.3V    | OUT |         | POWER    | +3.3V Output – 300mA available           |
| 2   | I2C_SDA0 | BI  | YES     | I2C      | I2C Channel 0 Data                       |
| 3   | GND      |     |         | POWER    | GROUND                                   |
| 4   | GND      |     |         | POWER    | GROUND                                   |
| 5   | RTS3     | OUT | NO      | UART     | RXD from Baseboard – Station 2, 3        |
| 6   | GPIO5    | OUT | NO      | BOOT     | BOOT to N-PLC Station 2                  |
| 7   | I2C_SCL0 | OUT | YES     | I2C      | I2C Channel 0 Clock                      |
| 8   | TXD_CON  | OUT | NO      | UART     | TXD – Debug Console                      |
| 9   | RXD_CON  | IN  | YES     | UART     | RXD – Debug Console                      |
| 10  | GPIO6    | OUT | NO      | BOOT     | BOOT to N-PLC Station 1                  |
| 11  | GPIO4    | OUT | NO      | BOOT     | BOOT to N-PLC Station 3                  |
| 12  | USB_DP   | BI  | NO      | USB      | USB Channel 4 D+ to Base Board Plug In 4 |
| 13  | GPIO30   |     |         |          | Battery ON -1 = Battery Backup           |
| 14  | USB_DM   | BI  | NO      | USB      | USB Channel 4 D+ to Base Board Plug In 4 |
| 15  | +5V      | OUT |         | POWER    | +5V Output – 2A available                |
| 16  | USB_DP   | BI  | NO      | USB      | USB Channel 3 D+ to Base Board Plug In 2 |
| 17  | USB_DM   | BI  | NO      | USB      | USB Channel 3 D- to Base Board Plug In 2 |
| 18  | USB_DP   | BI  | NO      | USB      | USB Channel 2 D+ to Base Board Plug In 3 |
| 19  | USB_DM   | BI  | NO      | USB      | USB Channel 2 D- to Base Board Plug In3  |
| 20  | GND      |     |         | POWER    | GROUND                                   |

## J9 – 8WAY RJ45

| Pin | Port          | Dir | Function | Description   |
|-----|---------------|-----|----------|---|
| 1   | TXD RS232     | OUT | UART     | RS232 – TXD 1 WIRE +5V – 100mA Fuse                     |
| 2   | RXD RS232     | IN  | UART     | RS232 – RXD   |
| 3   | TX+/RX+ RS485 | BI  | UART     | RS485 –TX/RX+ Half Duplex – 120OHM Termination Resistor |
| 4   | 1 WIRE VCC    | OUT | POWER    | 1 WIRE +5V – 100mA Fuse                                 |
| 5   | GND           |     | POWER    | GROUND  |
| 6   | TX-/RX- RS485 | BI  | UART     | RS485 –TX/RX- Half Duplex – 120OHM Termination Resistor |
| 7   | 1 WIRE DATA   | OUT | 1 WIRE   | 1 WIRE DATA   |
| 8   | 1 WIRE GND    |     | 1 WIRE   | 1 WIRE GROUND   |

## J2 – 30WAY GPIO TO LED / LCD DISPLAY PCB

| Pin | Port     | Dir   | Pull Up | Function | Description                         |
|-----|----------|-------|---------|----------|-------------------------------------|
| 1   | +5V      | OUT   |         | POWER    | +5V Output – 1A available           |
| 2   | +5V      | OUT   |         | POWER    | +5V Output – 1A available           |
| 3   | +5V      | OUT   |         | POWER    | +5V Output – 1A available           |
| 4   | +5V      | OUT   |         | POWER    | +5V Output – 1A available           |
| 5   | I2C_SCL  | OUT   | YES     | I2C0     | I2C – Channel 0 Clock               |
| 6   | SPI_MISO | IN    |         | SPI      | SPI Master In – Slave Out – LCD I/F |
| 7   | I2C_SDA  | BI DI | YES     | I2C0     | I2C – Channel 0 Data                |
| 8   | SPI_MOSI | OUT   |         | SPI      | SPI Master Out – Slave In – LCD I/F |
| 9   | I2C_SCL  | OUT   | YES     | I2C1     | I2C – Channel 1 Clock               |
| 10  | SPI_CLK  | OUT   |         | SPI      | SPI Clock – LCD I/F                 |
| 11  | I2C_SDA  | IN    | YES     | I2C1     | I2C – Channel 1 Data                |
| 12  | SPI_SS0  | OUT   |         | SPI      | SPI Slave Select 0 – LCD I/F        |
| 13  | NC       |       |         |          | Spare                               |
| 14  | SPI_SS1  | OUT   |         | SPI      | SPI Slave Select 1                  |
| 15  | +3.3V    | OUT   |         | POWER    | +3.3V Output – 300mA available      |
| 16  | +3.3V    | OUT   |         | POWER    | +3.3V Output – 300mA available      |
| 17  | +3.3V    | OUT   |         | POWER    | +3.3V Output – 300mA available      |
| 18  | +3.3V    | OUT   |         | POWER    | +3.3V Output – 300mA available      |
| 19  | GPIO36   | IN    |         | INT      | I2C INTERRUPT – I2C Switches        |
| 20  | GPIO30   | BI    |         | GPIO     | General Purpose – Not used          |
| 21  | GPIO18   | OUT   |         | GPIO     | LCD BACKLIGHT ON/OFF - PWM          |
| 22  | GPIO31   | OUT   |         | GPIO     | General Purpose                     |
| 23  | GPIO25   | OUT   |         | GPIO     | SPI DATA/CMD for LCD                |
| 24  | 3.3V_RST | OUT   |         | RESET    | Output from 3.3V Supervisor         |
| 25  | +12V     | OUT   |         | POWER    | +12V DC OUT                         |
| 26  | +12V     | OUT   |         | POWER    | +12V DC OUT                         |
| 27  | GND      |       |         | POWER    | GROUND                              |
| 28  | GND      |       |         | POWER    | GROUND                              |
| 29  | GND      |       |         | POWER    | GROUND                              |
| 30  | GND      |       |         | POWER    | GROUND                              |

