



Motorola RTU

MOSCAD, MOSCAD *Lite*

Overview

Maple Systems' **BLU300 Series** Operator Interface Terminals (Maple OITs) communicate with Motorola RTU MOSCAD Controllers using the Modbus RTU protocol. When configured with BlueLeaf configuration software, the Maple OIT is the master in a point-to-point single master, single slave format.

Compatible Controllers	
Family	Model
MOSCAD Family	F69xx
MOSCAD Lite Family	F68xx

Communications Cable

The Maple OIT should be connected to Port 1B of the Motorola RTU MOSCAD Controller.

A list of communications cables offered by Maple Systems as well as cable assembly instructions to assist you in assembling your own communications cable are available on our website at www.maple-systems.com/cables.htm.

WARNING: If your communications cable is not wired exactly as shown in our cable assembly instructions, damage to the OIT or loss of communications can result.

Controller Settings

Ind	PLC Address	Connect to MOSCAD (Name)	Via Port (Name)
0	1	LOCAL	RTU AS PLC

Ports List Location	Link Name	Port Interface	Default Routing
CPU/Port1	PLC1	Third Party Protocols Connect to: Master Port Name: PLC1 Baud Rate: 19,200 Format: 8, None, 1 MOSCAD is DCE	None

Accessible Memory

Register Memory

The following table lists the controller's register memory ranges that the Maple OITs are able to access. Please note that your controller's memory range may be *smaller* or *larger* than that supported by these OITs. The following register memory can be displayed in 16 or 32 bit format on the Maple OIT.

NOTE: T, C and R represent Table, Column, and Row, respectfully.

Controller Register Address	Modbus Register Address
T=0 / C=0 / R=0 to T=4 / C=7 / R=14	40001 - 49999

Discrete Memory

The following table lists the controller's discrete memory ranges that the Maple OITs are able to access. Please note that your controller's memory range may be *smaller* or *larger* than that supported by these OITs. The following discrete memory is displayable in single-bit format on the Maple OIT.

Controller Bit Address	Modbus Bit Address
T=0 / C=0 / R=0 to T=4 / C=7 / R=14	1 - 9999

Address Conversion:

$$\text{ModBus Address} = (\text{Table} * 2048) + (\text{Column} * 256) + \text{Row} + 1$$

Important Memory Considerations

If your controller's memory range is smaller than the range supported by the Maple OITs, it is possible to configure the OIT to monitor a controller memory address which does not exist. Since this can cause unpredictable results, when you configure the OIT please ensure that all selected controller memory addresses are valid for your controller model.

Do not configure the OIT to write to any controller memory address which should only be written to by the controller.

The Maple OITs use the following Modbus function codes:

- 01 - Read output coils (ex. 00001)
- 02 - Read input coils (ex. 10001)
- 03 - Read data registers (ex. 40001)
- 04 - Read input registers (ex. 30001)
- 05 - Write output coils (ex. 00001)
- 06 - Write data registers (ex. 40001)

BlueLeaf Communication Settings

The following table lists the communications settings that must be configured in BlueLeaf software. These settings can be found in the **Tools...HIM-PLC Communications Settings** menu. Please note:

- the **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the Motorola RTU MOSCAD Controller
- the **Options** column lists BlueLeaf's's options; your controller may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	Modbus RTU Master		See Controller Information Sheet 1033-0045 <i>Modbus Generic Series</i> for more information
Com Port:	RS232	RS232, RS485 (2-wire only)	Tools...Set HIM-PLC Port
Baud Rate:	9600	4800,9600,19200, 38400,57600, 115200	Must match the Controller's port setting. Use the fastest baud rate supported by controller.
Data Bits:	8	7 or 8	Must match the Controller's port setting.
Stop Bits:	1	1 or 2	Must match the Controller's port setting.
Parity:	None	Even, Odd, None	Must match the Controller's port setting.
Net Add:	1	0-255	Must match the Modbus port setting. Configure in each object attribute.

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