

# MultiConnect® rCell 100 Series

Cellular Routers now supporting LTE Cat 4, Cat M1 & NB-IoT





MultiConnect\* rCell 100 Series of industrial cellular routers, optimized for secure M2M (machine-to-machine)/Internet of Things (IoT) applications, with mPower™ embedded software, offering a robust Ethernet or serial network interface platform ready to deploy. The intuitive user interface and free cloud device management (no recurrent monthly fees) allows for quick configuration and over-the-air upgrades. Enhanced with features such as WAN failover, secure software updates, advanced firewall and routing configuration, and Certificate Management, the MultiConnect rCell 100 Series creates an ideal environment for secure and redundant communications critical to the reliability of remote monitoring systems in a variety of industries.

#### **BENEFITS**

- Lowest total cost of ownership
- Long and stable lifecycles
- Certified and carrier approved

#### **FEATURES**

- 4G (Cat 4, Cat 3, Cat M1 & NB-IoT), 3G and 2G models
- Flexible Web API for developers based on RESTful JSON over HTTPs
- Ruggedized enclosure
- Designed, manufactured and tested in ISO 13485 facilities
- Remotely hosted device management platform
- mPower Edge Intelligence embedded software



#### HARDWARE SPECIFICATIONS

Models	MTR-LNA7	MTR-LEU7	
Performance	LTE Cat 4		
Frequency Band (MHz)	4G: B2(1900), B4(AWS1700), B5(850), B12(700), B13(700) 3G: B2(1900), B4(AWS1700), B5(850)	4G: B1(2100), B3(1800), B7(2600), B8(900), B20(800), B28A(700) 3G: B1(2100), B8(900) 2G: B3(1800), B8(900)	
Packet Data*		Up to 150 Mbps downlink/ Up to 50 Mbps uplink (Category 4)	
Diversity/MIMO	Rx Diversity an	d MIMO DL 2x2	
SMS	Point-to-Point Messaging Mobile-Orig		
Voltage	7V to 3	32VDC	
Connectors			
Cellular	Female SMA		
Wi-Fi	Reverse polarity female SMA		
GPS	Female SMA		
SIM	Micro SIM (3FF); 1.8 and 3V		
LAN	RJ-45, 10/100 BaseT		
RS-232	DE9		
Power	2.5 mm miniature (screw-on)		
Physical Description			
Dimensions (L x W x H)	4.17" x 3.0" x 1.15" (10.6 cm x 7.6 cm x 2.9 cm)		
Weight	0.51 lbs (0.231 Kg)		
Chassis Type	Aluminum		
Environmental			
Operating Temperature <sup>†</sup>	-40° to +185° F (-40° to +85° C)		
Storage Temperature	-40° to +185° F (-40° to +85° C)		
Humidity	Relative humidity 15% to 93% noncondensing		
Certifications			
Regulatory	FCC Class B (US)	RED (EU Economic Area)	
Safety	UL60950-1 (US), UL 201 (US)	IEC60950-1 (EU Economic Area)	
Network	(pending) AT&T, Verizon, T-Mobile, Rogers	(pending) EU carriers	
Quality	MIL-STD-810G: High Temp, Low Temp, Cold Dwell, Random Vibration and Sine Vibration SAE J1455: Random Vibration and Sine Vibration		

\* Actual performance speeds may be affected by a variety of attributes such as cell tower distance, data loads, packet sizes, etc.
† Device has been tested up to +85° C. UL Recognized @ 40° C, limited by AC power supply. UL Recognized @ 60° C when used with the fused DC power cable, part number FPC-532-DC. Note: The radio's performance may be affected at the temperature extremes. This is considered normal. There is no single cause for this function. Rather, it is the result of an interaction of several factors, such as the ambient temperature, the operating mode and the transmit power.

# **HIGHLIGHTS**

#### **Embedded Software**

mPower" Edge Intelligence is a new embedded software offering, building on its popular application enablement platform, to deliver programmability, network flexibility, enhanced security and manageability for scalable Industrial Internet of Things (IIoT) solutions.

## Wi-Fi/Bluetooth Specifications

The Wi-Fi interface can be set up in 802.11 b\g\n Access Point (AP) or client mode. In AP mode, the router can support up to 5 client connections. The Bluetooth serial interface allows you to set up a transparent data pipe from a Bluetooth device to a remote server. The router can be configured using TCP or UDP protocols and supports client and server modes giving you the flexibility you need for your particular application. RFCOM and SPP profile support. Contact MultiTech about additional Bluetooth profile support.

# Security 1

The MultiConnect rCell 100 Series of cellular routers use IPSec industry standard data encryption to provide high performance, secure LAN-to-LAN VPN connections with 3DES or AES encryption using IKE and PSK key management. Support for five concurrent VPN tunnels. Additionally a private, secure digital signature with integrity check update technique is now available, minimizing file damage, tampering or loading of invalid firmware. MultiTech signs and distributes firmware updates through a secure standard firmware distribution process and verifies the firmware signature before installation of the firmware for maximum device integrity.

#### Wi-Fi

- 802.11 b\g\n (1x1), 2.5GHz (20MHz BW)
- 11, 54 and 65 Mbps max theoretical throughput, for 802.11 b\g\n, respectively
- 20, 15 and 14.5 dBm output power, for 802.11 b\g\n, respectively
- WEP, WPA, and WPA2 support

#### Bluetooth

• Version 2.1+EDR • Power Class 1.5 • Data rate 3 Mbps

## HARDWARE SPECIFICATIONS

Models	MTR-MNG2	MTR-LAT1	MTR-LVW2	MTR-LEU1
Performance	LTE Cat M1 / NB-IoT Dual Mode + 2G Fallback	LTE Cat 3		
Frequency Band (MHz)	3GPP Rel. 13 4G: B1(2100)/B2(1900/ B3(1800)/B4(AWS1700)/ B5(850)/B8(900)/ B12(700)/B13(700)/ B18(800)/B19(800)/ B20(800)/B26(850)/ B28(700)/B39(1900) 2G: B2(1900)/B3(1800)/ B5(850)/B8(900)	4G: B17(700)/B5(850) /B4(AWS1700)/ B2(1900) 3G: B5(850)/B2(1900) 2G: (850/1900)	4G: B13(700)/ B4(AWS1700)	4G: B20(800)/ B3(1800)/B7(2600) 3G: B5(850)/ B8(900)/B1(2100) 2G: (900/1800)
Packet Data*	Cat. M1: Up to 300 Kb/s Downlink Up to 375 Kb/s Uplink NB1: Up to 250 Kb/s Downlink (multi-tone) Up to 20 Kb/s Uplink (single-tone)	Up to 100 Mbps downlink/ Up to 50 Mbps uplink (Category 3)		
Diversity/MIMO	N/A	Rx Diversity and MIMO DL 2x2		
SMS	Text & PDU, Point-to-Point	Point-to-Pe	oint Messaging, Mobile-Termi Mobile-Originated SMS	nated SMS,
Voltage		7V to 32	2VDC	
Connectors				
Cellular	Female SMA			
Wi-Fi	Reverse polarity female SMA	N/A		
GPS	Female SMA			
SIM	Mini SIM (2FF); 1.8 and 3V			
LAN	RJ-45, 10/100 BaseT			
RS-232	DE9			
Power	2.5 mm miniature (screw-on)			
Physical Description				
Dimensions (L x W x H)		4.17" x 3.0" x 1.15" (10.6 c	cm x 7.6 cm x 2.9 cm)	
Weight	0.51 lbs (0.231 Kg)			
Chassis Type		Aluminum		
Environmental				
Operating Temperature <sup>†</sup>	-40° to +176° F (-40° to +80° C)			
Storage Temperature	-40° to +185° F (-40° to +85° C)			
Humidity	Relative humidity 15% to 93% non-condensing			
Certifications				
Regulatory	RED (EU Economic Area) (pending)	FCC Class B (US), IC (Canada)	FCC Class B (US)	RED (EU Economic Area)
Safety	IEC 60950-1 (EU Economic Area) (pending)	UL60950-1 (US), UL 201 (US), cUL60950-1 (Canada)	UL60950-1 (US), UL 201 (US)	IEC60950-1 (EU Economic Area)
Network	AT&T (pending), Verizon (pending), T-Mobile (pending), Rogers (pending) EU Carriers (pending)	AT&T, T-Mobile, Rogers	Verizon	EU carriers
Quality	MIL-STD-810G: High Temp, Low Temp, Cold Dwell, Random Vibration and Sine Vibration SAE J1455: Random Vibration and Sine Vibration			
	SAL SITSS. Italiaoni vibration and sine vibration			

<sup>\*</sup> Actual performance speeds may be affected by a variety of attributes such as cell tower distance, data loads, packet sizes, etc.

† Device has been tested up to +85° C. UL Recognized @ 40° C, limited by AC power supply. UL Recognized @ 60° C when used with the fused DC power cable, part number FPC-532-DC. Note: The radio's performance may be affected at the temperature extremes. This is considered normal. There is no single cause for this function. Rather, it is the result of an interaction of several factors, such as the ambient temperature, the operating mode and the transmit power.

## HARDWARE SPECIFICATIONS

Models	MTR-H6	MTR-H5	MTR-G3	
Performance	HSPA	HSPA+	GPRS Class 10	
Frequency Band (MHz)	3G: Tri-band 850/900/2100 2G: Quad-band 850/900/1800/1900	3G: WCDMA/HSDPA/ HSUPA 800/850/900/ AWS1700/1900/2100 2G: GSM/GPRS/EDGE 850/900/1800/1900	Quad-band 850/900/1800/1900	
Packet Data*	Up to 7.2 Mbps downlink, up to 5.76 Mbps uplink	Up to 21.0 Mbps downlink, up to 5.76 Mbps uplink	Up to 85.6K downlink Up to 85.6K uplink	
Diversity/MIMO	No	Yes	No	
SMS	Point-	to-Point Messaging, Mobile-Terminate Mobile-Originated SMS	ed SMS,	
Voltage		7V to 32VDC		
Connectors				
Cellular		Female SMA		
Wi-Fi	Reverse polari	Reverse polarity female SMA N/A		
GPS	Female SMA			
SIM	Mini SIM (2FF); 1.8 and 3V			
_AN	RJ-45, 10/100 BaseT			
RS-232	DE9			
Power	2.5 mm miniature (screw-on)			
Physical Description				
Dimensions (L x W x H)	4.17" x 3.0" x 1.15" (10.6 cm x 7.6 cm x 2.9 cm)			
Weight	0.51 lbs (0.231 Kg)			
Chassis Type	Aluminum			
Environmental				
Operating Temperature <sup>†</sup>		-40° to +185° F (-40° to +85° C)		
Storage Temperature	-40° to +185° F (-40° to +85° C)			
Humidity	Relative humidity 15% to 93% noncondensing			
Certifications				
Regulatory	RED (EU Economic Area), RCM (Australia/NZ)	FCC Class B (US), IC (Canada), RED (EU Economic Area), RCM (Australia/NZ)	RED (EU Economic Area)	
Safety	IEC60950-1 (EU Economic Area), AS/NZS 60950.1 (Australia/NZ)	UL60950-1 (US), UL 201 (US), Class I Div 2 (US and Canada), cUL60950-1 (Canada), IEC60950-1 (EU Economic Area), AS/NZS 60950.1 (Australia/NZ)	IEC60950-1 (EU Economic Area)	
Network	GCF, Telstra, EU carriers	PTCRB, GCF approved module, AT&T, T-Mobile, Telstra, EU carriers Rogers, Pending: Bell, Telus	EU carriers	
Quality	MIL-STD-810G: High Tem SAE	MIL-STD-810G: High Temp, Low Temp, Cold Dwell, Random Vibration and Sine Vibration SAE J1455: Random Vibration and Sine Vibration		

<sup>\*</sup> Actual performance speeds may be affected by a variety of attributes such as cell tower distance, data loads, packet sizes, etc.

† Device has been tested up to +85° C. UL Recognized @ 40° C, limited by AC power supply. UL Recognized @ 60° C when used with the fused DC power cable, part number FPC-532-DC. Note: The radio's performance may be affected at the temperature extremes. This is considered normal. There is no single cause for this function. Rather, it is the result of an interaction of several factors, such as the ambient temperature, the operating mode and the transmit power.

# **SOFTWARE SPECIFICATIONS**

SECURITY		
	Up to 5 concurrent tunnels	
	IPSec IKEv1,v2 Open VPN	
	Cipher suite: DHGroup 14 Configurable encryption,	
VPN	Configurable hash, Configurable TLS: 1.0,1.1,1.2	
	Encapsulation: ESP Encryption Methods: 3DES, AES-128, AES-192, AES-256,	
	Authentication: MD5, SHA-1, SHA-2, SHA2-256, SHA2-384, SHA2-512,.	
	Key Group: DH2 (1024-bit), DH5 (1536-bit), DH14 (2048-bit), DH15 (3072-bit), DH16 (4096-bit), DH17 (6144-bit), DH18 (8192-bit),	
	DH22 (1024-bit), DH23 (2048-bit), DH24 (2048-bit)	
MAC Filtering	Accept, reject, drop or log packets based on MAC address	
SPI Firewall	Configurable DNAT, NAT-T, SNAT  Denial-of-service / ICMP/Ping flood / Brute force access	
IP Defense	PPP IP-Pass through mode provides ./24 network masks and regular ./32 network masks Separate Firewall configuration allows setup and management of a trusted list of IP addresses IPv4 Mask settings allow the connected device to obtain LAN settings automatically or the LAN settings can be configured manually. Enables multiple devices to connect to the MTR providing for the unique management and identification of all the devices within the network.	
X.509 Certificates	Support generation and/or import of multiple CA certificates through use of SHA-256. User can add and delete user's root certificates in addition to the certificates from the /etc/ssl by application.	
PAP/CHAP	Authentication protocols for secure PPP connections	
MANAGEMENT		
	V1,2,3 SNMPv3 and authentication protocols MD5 and SHA1	
SNMP	as well as encryption protocols DES and AES-128. configurable multiple SNMP trap servers and SNMP server configurations enhanced SNMP server Web UI allows configuring SNMPy3 security settings	
RADIUS	for SNMP configurations and SNMP trap servers  Remote Authentication	
HTTP server	Web UI for setup and help	
niir seivei	Trouble shooting commands to store logs to DeviceHQ	
SMS	Remote reboot over SMS  Commands to retrieve connection status, radio stats, Ethernet link status  APN modification over SMS	
Administration	Multiple user hierarchy and access rights	
Desire IIO	Remote device management platform provides device status and	
DeviceHQ	information in a clear graphical format. Manage , monitor, group, configure and upgrade devices remotely	
Event Notifications (SNMP, SMS, Email) Time Stamped	Active/inactive interface status (serial, Ethernet, Wi-Fi, cellular link) Data traffic stats (Ethernet, Wi-Fi, Cellular) Data usage alerts	
API	RESTful JSON over HTTPs	
FOTA	Radio firmware update over the air - limited to H5/H6 models	
Firmware Updates	Private, secure, digital signature technique to enable transferring the device firmware safely. The technique will defeat attempts to load invalid firmware files or files that have been subjected to damage or tampering. MultiTech signs and distributes the firmware through a secure, standard firmware distribution process, and verifies the firmware signature before it installs the firmware files to ensure integrity.	
USER INTERACTION		
User Interface	Secure graphical and intuitive web UI (requires user name and password)	
Configuration	Set up wizard or manual option	
Help	Context sensitive help. Documentation and step-by-step directions integrated into the web UI	
Personalization	Customize support contact information, logos and color schemes	
NETWORKING FLEXIBILITY		
WAN Failover	Wi-Fi to Cellular	
Dynamic DNS (DDNS)	Automatically updates DNS	
DHCP Server	Supports fixed and dynamic IP addressing	
Bridge Mode	PPP/IP Pass-through	
Clock	Configurable SNTP client	
Serial RS-232	PAD, TCP/UDP client and server	
MODBUS	Pass-through, RTU to TCP and vice versa, TCP slave query	
Persistent Connectivity/ Keep Alive	Automatic repair of the cellular PPP connection Configurable ICMP or TCP ping at specified intervals	
Dial on Demand	Cellular connection only when there is traffic to send	
Wake up on Call	Cellular connection upon a wake up event such as ring, caller ID or SMS	
GPS	Server and client	
Wi-Fi	Server and client	

#### ORDERING INFORMATION

#### MultiConnect\* rCell 100 Series 4G-LTE Models

Model	Description	Region
MTR-LNA7-B07	LTE Cat 4 Router with Fallback, without Accessories (AT&T/Verizon)	US/Canada
MTR-LNA7-B07-US	LTE Cat 4 Router with Fallback and US Accessory Kit (AT&T/Verizon)	US/Canada
MTR-LNA7-B10	LTE Cat 4 Router with Fallback and Wi-Fi/BT/GPS,	US/Canada
	without Accessories (AT&T/Verizon)	
MTR-LNA7-B10-US	LTE Cat 4 Router with Fallback and Wi-Fi/BT/GPS,	US/Canada
	with US Accessory Kit (AT&T/Verizon)	
MTR-LEU7-B07	LTE Cat 4 Router with Fallback, without Accessories (Europe)	Europe/GB
MTR-LEU7-B07-EU-GB	LTE Cat 4 Router with Fallback and EU/UK Accessory Kit (Europe)	Europe/GB
MTR-LEU7-B10	LTE Cat 4 Router with Fallback and Wi-Fi/BT/GPS,	Europe/GB
	without Accessories (Europe)	
MTR-LEU7-B10-EU-GB	LTE Cat 4 Router with Fallback and Wi-Fi/BT/GPS,	Europe/GB
	with EU/UK Accessory Kit (Europe)	
MTR-LAT1-B07	LTE Cat 3 Router w/Fallback, w/o Accessory Kit (AT&T)	US/Canada
MTR-LAT1-B07-US	LTE Cat 3 Router w/Fallback, w/US Accessory Kit (AT&T)	US/Canada
MTR-LAT1-B08	LTE Cat 3 Router w/GPS & Fallback, w/o Accessory Kit (AT&T)	US/Canada
MTR-LAT1-B08-US	LTE Cat 3 Router w/GPS & Fallback, US Accessory Kit (AT&T)	US/Canada
MTR-LVW2-B07	LTE Cat 3 Router w/o Accessories (Verizon)	US
MTR-LVW2-B07-US	LTE Cat 3 Router w/US Accessory Kit (Verizon)	US
MTR-LVW2-B08	LTE Cat 3 Router w/GPS w/o Accessories (Verizon)	US
MTR-LVW2-B08-US	LTE Cat 3 Router w/GPS & US Accessory Kit (Verizon)	US
MTR-LEU1-B07	LTE Cat 3 Router w/o Accessories (Europe)	Euro/GB
MTR-LEU1-B07-EU-GB	LTE Cat 3 Router w/EU/UK Accessory Kit (Europe)	Euro/GB
MTR-LEU1-B08	LTE Cat 3 Router w/GPS w/o Accessories (Europe)	Euro/GB
MTR-LEU1-B08-EU-GB	LTE Cat 3 Router w/GPS & EU/UK Accessory Kit (Europe)	Euro/GB
MTR-MNG2-B07	LTE Cat M1+NB-IoT Router w/Fallback, w/o Accessory Kit	Global
MTR-MNG2-B07-WW	LTE Cat M1+NB-IoT Router w/Fallback, w Accessory Kit	Global
MTR-MNG2-B10	LTE Cat M1+NB-IoT Router w/Wi-Fi/BT/GPS & Fallback, w/o Accessory Kit	Global
MTR-MNG2-B10-WW	LTE Cat M1+NB-IoT Router w/Wi-Fi/BT/GPS & Fallback, w/ Accessory Kit	Global

#### MultiConnect® rCell 100 Series HSPA+ Models

Model	Description	Region
MTR-H5-B07	HSPA+ Router w/o Accessories	Global
MTR-H5-B07-US-EU-GB	HSPA+ Router w/US/EU/UK Accessory Kit	US/Euro/UK
MTR-H5-B08	HSPA+ Router w/GPS w/o Accessories	Global
MTR-H5-B08-US-EU-GB	HSPA+ Router w/GPS & US/EU/UK Accessory Kit	US/Euro/UK
MTR-H5-B09	HSPA+ Router w/Wi-Fi w/o Accessories	Global
MTR-H5-B09-US-EU-GB	HSPA+ Router w/Wi-Fi & US/EU/UK Accessory Kit	US/Euro/UK
MTR-H5-B10	HSPA+ Router w/Wi-Fi/GPS w/o Accessories	Global
MTR-H5-B10-US	HSPA+ Router w/Wi-Fi/GPS & US Accessory Kit	US/Canada
MTR-H5-B07-HZ	HSPA+ Router w/Class I Div 2 Kit	US/Canada
MTR-H5-B10-HZ	HSPA+ Router w/Wi-Fi/GPS & Class I Div 2 Kit	US/Canada

#### MultiConnect® rCell 100 Series HSPA Models for Europe

Model	Description	Region
MTR-H6-B16	HSPA Router w/o Accessories	Euro/GB
MTR-H6-B16-EU	HSPA Router w/EU Accessory Kit	EMEA
MTR-H6-B16-GB	HSPA Router w/UK Accessory Kit	GB/IE
MTR-H6-B18	HSPA Router w/Wi-Fi w/o Accessories	Euro/GB
MTR-H6-B18-EU	HSPA Router w/Wi-Fi & EU Accessory Kit	EMEA
MTR-H6-B18-GB	HSPA Router w/Wi-Fi & UK Accessory Kit	GB/IE
MTR-H6-B19	HSPA Router w/Wi-Fi/GPS w/o Accessories	Euro/GB

#### MultiConnect® rCell 100 Series GPRS Models for Europe

Model	Description	Region
MTR-G3-B16	GPRS Router w/o Accessories	Euro/GB
MTR-G3-B16-EU-GB	GPRS Router w/EU/UK Accessory Kit	EMEA

Use ordering codes for specific build options.

Go to www.multitech.com for detailed product model numbers.

Produced in the U.S. of U.S. and non-U.S. components. Features and specifications are subject to change without notice.

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#### **Services & Warranty**

MultiTech's comprehensive Support Services programs offer a full array of options to suit your specific needs. These services are aimed at protecting your investment, extending the life of your solution or product, and reducing total cost of ownership. Our seasoned technical experts, with an average tenure of more than 10 years, can walk you through smooth installations, troubleshoot issues and help you with configurations.

#### **Installation Support**

MultiTech's Installation Support Service delivers priority service with the ability to work one-on-one with an experienced MultiTech technical support engineer, to guide you through the installation process for our products.

#### **Technical Support Services**

At MultiTech, we're committed to providing you personalized attention and quality service while providing you a quick response to your product support needs. We have several options of support for you to choose from.

For additional information on Support Services as well as other service offerings, please contact your MultiTech representative or visit www.multitech.com/support.go



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