![ASEM logo]

Remote Assistance Solutions
UBIQUITY
Router RK22

Industrial Automation - Products & Configurations

RK22-ET BASIC SYSTEMS > note 1		POWER [W]
RK22-ET	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +70°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	8
RK22-ET 3G	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **2G/3G/3G+ modem** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +60°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	12
RK22-ET 4G/LTE	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **2G/3G/4G modem** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +70°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	12
RK22-ET 4G/LTE-AM	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **2G/3G/4G modem "AM" version** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +70°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	12
RK22-ET WiFi	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **WiFi module** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +60°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	10
RK22-ET 3G WiFi	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **2G/3G/3G+ modem ▪ WiFi module** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +60°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	14
RK22-ET 4G/LTE WiFi	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **2G/3G/4G modem ▪ WiFi module** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +60°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	14
RK22-ET 4G/LTE-AM WiFi	ARM i.MX 7Dual, Cortex A7 1 GHz dual core ▪ 1 GB RAM ▪ 8GB eMMC ▪ 4 ports unmanaged Ethernet switch ▪ **2G/3G/4G modem "AM" version ▪ WiFi module** ▪ without antenna ▪ ASEM UBIQUITY ROUTER runtime ▪ Extended temperature range -20° ÷ +60°C ▪ DIN-RAIL BOOK mounting o WALL BOOK mounting ▪ 12 months warranty	14

REMOTE ASSISTANCE	ASEM UBIQUITY Router runtime	-

OPTIONS		POWER [W]
3G ANTENNAS	2G/3G/3G+ magnetic antenna with **2mt** cable ▪ panel mount ▪ 50W, 50 Ohm ▪ 116mm Φ29,5mm ▪ SMA-M	-
3G / 4G ANTENNAS	2G/3G/4G stilo steerable antenna ▪ RK22 direct mount or panel mount using extention cable ▪ 10W, 50 Ohm ▪ 72mm ▪ SMA-M	-
	2G/3G/4G wall-mount antenna with **3mt** cable ▪ wall mount with 90° bracket ▪ IP67 ▪ 2W, 50 Ohm ▪ 250mm ▪ SMA-M	-
	2G/3G/4G outdoor antenna with **1mt** cable ▪ outdoor panel mount ▪ IP67 ▪ 5W, 50 Ohm ▪ h48mm x Φ50mm ▪ SMA-M	-
CABLES >note 2	**3mt** extension cable for antennas ▪ RG58/U low loss cable ▪ IP20 ▪ SMA-M/F	-
	5mt extension cable for antennas ▪ RG58/U low loss cable ▪ IP20 ▪ SMA-M/F	-
	10mt extension cable for antennas ▪ RG58/U low loss cable ▪ IP20 ▪ SMA-M/F	-
WiFi ANTENNAS	Kit for two WiFi BLADE dual band steerable antennas ▪ RK21 direct mount or panel mount using extension cable ▪ omnidirectional, 3W, 50 Ohm ▪ 157mm ▪ RP-SMA-M	-
	Kit for two WiFi STILO dual band steerable antennas ▪ RK21 direct mount or panel mount using extension cable ▪ omnidirectional, 2W, 50 Ohm ▪ 194mm ▪ RP-SMA-M	-
WiFi CABLES >note 2	Kit for two **3mt** extension cables for WiFi antenna ▪ LMR-200 low loss cable ▪ IP20 ▪ RP-SMA-M/F	-
	Kit for two **5mt** extension cables for WiFi antenna ▪ LMR-200 low loss cable ▪ IP20 ▪ RP-SMA-M/F	-
	Kit for two **10mt** extension cables for WiFi antenna ▪ LMR-200 low loss cable ▪ IP20 ▪ RP-SMA-M/F	-
WARRANTY EXTENSION	Warranty extension to 18 months on basic system and its variants	
	Warranty extension to 24 months on basic system and its variants	
	Warranty extension to 36 months on basic system and its variants	

NOTES

For power consumption calculation we reccomend to read the tips on pg. 4. The power values does not include the absorbed power of USB devices connected to the ports.

1: Price does not include ASEM UBIQUITY DOMAIN that must be purchased one-off at the first order of a license or system that includes the UBIQUITY runtime. See pg.222

2: The efficiency of the antennas and the extension cables is dependent on the quality of the radio frequency signal present at the installation site therefore we suggest not to use more than one extension cable between the antenna and the router.

TECHNICAL SPECIFICATIONS		
Case		Aluminium, DIN-RAIL BOOK MOUNTING, WALL BOOK mounting kit included
Overall dimensions & weight		See details on the related section
Software	Remote assistance	ASEM UBIQUITY ROUTER runtime
Features		VPN with access to the Ethernet (LAN) subnetwork of the Ubiquity Router
		Serial port virtualization; MPI protocol not supported
		Multiple connection from different Control Center with different VPN for each client
VPN	Technology	Proprietary VPN technology optimized for industrial communication protocols with complete access to the Ethernet remote sub-network. Support for UDP broadcast. No need to reconfigure remote network devices. The service computer uses real IP in the IP address space of the remote network.
	Security	Secure and protected communication by TLS encrypted connections
Power supply		Input voltage 9÷34V DC ▪ Power supply section integrated on board
Motherboard		ASEM R372
Processor		ARM i.MX 7Dual multicore Heterogeneous ▪ Cortex A7 1 GHz dual core, 533 MHz system memory bus
System memmory		1GB DDR3L soldered on board
Storage memory		eMMC MLC 8GB (Solid State Disk), 8bit file system organization
Frontal access interfaces		4 x Unmanaged Ethernet switch 10/100/1000 Mbps (RJ45) for LAN connection
		1 x Ethernet 10/100/1000 Mbps (RJ45) for WAN connection
		1 x USB 2.0 (Type-A / host)
		1 x RS-232/422/485 (DB9M) multiprotocol, isolated
Digital Input	IN0	Security key input for WAN connection activation. Function managed by Control Center. Disabled by default.
	IN1	UBIQUITY Router software reset input
	Type	0÷24V DC, 500V isolation
Digital Output	OUT0	UBIQUITY Router authenticated on Domain and WAN remote connection enabled signalling
	OUT1	Remote assistance service running
	Type	Output with relay 200mA@24V DC max for contact (N.O. - normally open)
Buttons		UBIQUITY Router hardware reset
		UBIQUITY Router factory default restore
Approvals		CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1) ▪ RED pending ▪ cULus LISTED (UL 61010) pending
Protection grade		IP20
Environmental specifications		Operating temperature: -20° ÷ +70°C, -20° ÷ +60°C with WiFi or 3G modem ▪ Storage temperature: -30° ÷ +80°C ▪ humidity: 80% (non-condensing)
Standard warranty		12 months ▪ Warranty management by ASEM headquarters
Only for RK22-ET WiFi		
Module	Tipo	Half Mini PCIe module
	Standard	IEEE 802.11a/b/g/n ▪ 2.400÷2.4835GHz / 5.15÷5.85GHz ▪ Data rate 802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: 300Mbps
	Features	client / access point
	Security	WPA2
	Rx Sensitivity	802.11a: -73dBm / 802.11g: -74dBm / 802.11n(2,4GHz): -72dBm@HT20, -69dBm@HT40 / 802.11n(5GHz): -69dBm@HT20, -68dBm@HT40
	Antenna	1 x RP-SMA-F connector ▪ no antenna included
For RK22-ET 3G only		
Modem	Type	2G/3G/3G+ EDGE/HSPA quadriband modem up to 5,76Mbps upload / 21,6Mbps download
	Bands	UMTS/HSPA+: B1/B2/B5 ▪ GSM/GPRS/EDGE: 850/900/1800/1900 MHz
	Antenna	1 x SMA-F connector ▪ no antenna included
For RK22-ET 4G/LTE only		
Modem 4G/LTE	Type	2G/3G/4G LTE pentaband modem up to 50Mbps upload / 100Mbps download
	Bands	FDD-LTE: B1/B3/B7/B8/B20 ▪ TDD-LTE: B38/B40 ▪ UMTS/HSPA+: B1/B8 ▪ GSM/GPRS/EDGE: 900/1800 MHz
	Antenna	1 x SMA-F connector ▪ no antenna included
Modem 4G/LTE-AM	Type	3G/4G LTE quadriband modem up to 50Mbps upload / 100Mbps download
	Bands	FDD-LTE: B2/B4/B5/B17 ▪ UMTS/HSPA+: B2/B5
	Antenna	1 x SMA-F connector ▪ no antenna included

MODEM AND NETWORK COVERAGE				

Note: please consider that the following information are given for guidance only. Mobile networks coverage and supported frequencies have to be verified with local providers in the installation area.

		RK22 3G	RK22 4G/LTE	RK22 4G/LTE-AM
3G	Europe	✓	✓	-
	North/Latin America	✓	-	✓
	Asia	✓	✓	-
	Africa&Oceania	✓	✓	-
4G/LTE	Europe		✓	-
	North America		-	✓
	Latin America	n.a.	✓	✓
	Asia		✓	-
	Africa&Oceania		✓	-

DIMENSIONS (mm)

DIN-RAIL BOOK MOUNTING
default

WALL BOOK MOUNTING

146
46.4
73
73
129
13.4
Ø4.5
Ø9
7
164
186
34
15.3

MODEM 3G/4G
WiFi
RESET
RUN/STOP
COM Rx
POWER
REMOTE CONNECTION
COM Tx
USB 2.0
WAN
LAN 1
LAN 2
LAN 3
LAN 4
1 x RS232/422/485
isolated

HARDWARE RESET BUTTON
RESTORE FACTORY DEFAULT BUTTON
3G/4G MODEM ANTENNA
WiFi ANTENNAS

POWER
DIGITAL INPUT / OUTPUT

DC INPUT	
3	1

1	Vin +
2	Vin -
3	EARTH

DIGITAL IN / OUT					
8					1

1	IN 0 +
2	IN 0 -
3	IN 1 +
4	IN 1 -
5	OUT 0
6	
7	OUT 1
8	

3G, 4G/LTE and WiFi ANTENNAS INSTALLATION

STILO
direct mount

STILO/BLADE + CABLE
panel mount
3mt
5mt
10mt

MAGNETIC
panel mount
2mt *

WALL-MOUNT
with 90° bracket
3m

OUTDOOR
panel mount
1mt

* it is possible to add 3, 5 or 10mt extention cables