VPort 36-1MP Series

Quick Installation Guide

First Edition, March 2012

Overview

The VPort 36-1MP Series is the world's first rugged IP camera that withstands environmental temperatures ranging from -40 to 75°C without a heater/cooling fan. It is an industrial-grade, H.264 box-type IP camera that combines HD resolution (1280 x 720), advanced IVA (Intelligent Video Analysis) technology, and de-mist technology to enhance surveillance system efficiency while delivering state-of-the art video quality. Optional housing and PT scanner accessories are available for indoor and outdoor installation.

VPort 36-1MP Series is designed to be compatible with C/CS mount lenses to meet any viewing angle and distance requirement. With a built-in removable IR-cut filter and automatic color mode switching, the VPort 36-1MP Series is suitable for day-and-night use. Highly-tuned ROI (Region of Interest), BLC (Back Light Compensation), and WDR (Wide Dynamic Range) functions enable the VPort 36-1MP Series to produce exceptionally clear images. VPort 36-1MP Series can encode analog video into both H.264 and MJPEG video streams and can transmit up to 3 independent video streams (2 in H.264, and 1 in MJPEG) simultaneously. Advanced video encoding technology enables the camera to support up to 30 fps for each of the H.264 and MJPEG streams.

Package Checklist

Moxa's VPort 36-1MP Series is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

- 1 VPort 36-1MP series camera (one of models below)

Standard model	Description
VPort 36-1MP	VPort 36-1MP, POE, 0 to 60°C operating temperature
VPort 36-1MP-T	VPort 36-1MP, POE, -40 to 75°C operating temperature
VPort 36-1MP-IVA	VPort 36-1MP, POE, 0 to 60°C operating temperature, 1 IVA license
VPort 36-1MP-IVA-T	VPort 36-1MP, POE, -40 to 75°C operating temperature, 1 IVA license
VPort 36-1MP-DM	VPort 36-1MP, POE, 0 to 60°C operating temperature, de-mist function

• Screw handle accessory package

Inner hexagon screwdriver for tightening/ loosening lens holder	C/CS mount adapter ring	5-pin terminal block for DI and relay
3-pin terminal block for power input	2-pin terminal block for RS-485 DX+ and DX-	

• Quick Installation Guide
• Document & Software CD (includes User's Manual, Quick Installation Guide, and VPort Utility)
• Warranty Statement

NOTE Check the model name on the VPort's side label to determine if the model name is correct for your order.

NOTE This product must be installed in compliance with your local laws and regulations.

Features

Sensor: 1/2.7" HD progressive scan CMOS
Lens: C/CS mount lens (lens not included)
Auto Iris Type: DC drive
Illumination (low light sensitvity): • Color: 0.2 lux at F1.2 • B/W: 0.05 lux at F1.2
Synchronization: Internal
Gamma Correction: 0.45 or 1.0 (default 0.45)
White Balance: ATW/AWB (range: 3200 to 10000°K)
Dynamic Range: Color: 100 dB; B/W: 110 dB
Auto Electronic Shutter: 1/30 to 1/25000 sec.
Electronic Shutter: 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec.
S/N Ratio: 50 dB (Gamma, Aperture, AGC OFF; DNR ON)
ICR Control: Auto (light sensor control) or DI control
DNR: Built-in DNR
WDR: On/Off **2** www.moxa.com info@moxa.com IP Surveillance
AGC Control: On/Off
Flickerless Control: On/Off

Backlight Compensation: On/Off
Auto Exposure: On/Off
Image Rotation: Flip, Mirror, and 180° rotation
Image Setting: Manually tuning with brightness, saturation, contrast, and hue
Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
Video Outputs: Ethernet
Video Streams: Up to 3 video streams (2 x H.264 and 1 x MJPEG)
• Stream 1: H.264, 1280 x 720 resolution (max.)
• Stream 2: H.264, 720 x 480 resolution (max.)
• Stream 3: MJPEG, 720 x 480 resolution (max.)
Note: Streams 2 and 3 must be at the same resolution
Video Motion Detection: 3 independently configurable motion areas
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Video Recording: Event recording and stored in the SD card
Email/FTP Messaging: Automatic transfer of stored images via email or FTP when alert
Custom Alarms: HTTP event servers for setting customized alarm actions
Pre-alarm Buffer: 24 MB video buffer for JPEG snapshot images
Advance Software Feature:
• DynaStream™ support for automatic adjustment of frame rate
• 3 privacy mask areas provided
• ROI (Region of Interest) configuration for up to 3 areas
Safety: UL 60950-1, EN 50121-4, NEMA TS2, Class 1 Division 2 (Pending), Atex Zone 2 (Pending)
EMI: FCC Part 15, CISPR (EN 55022) class A
EMS: EN 61000-4-2 (ESD), Level 3 EN 61000-4-3 (RS), Level 3 EN 61000-4-4 (EFT), Level 3 EN 61000-4-5 (Surge), Level 3 EN 61000-4-6 (CS), Level 3 EN 61000-4-8, EN 61000-4-11
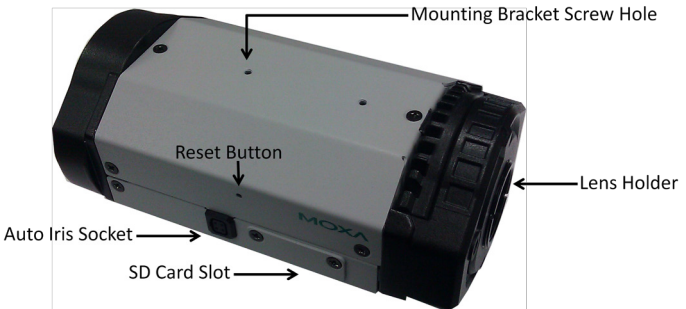**Shock:** IEC 60068-2-27
Freefall: IEC 60068-2-32
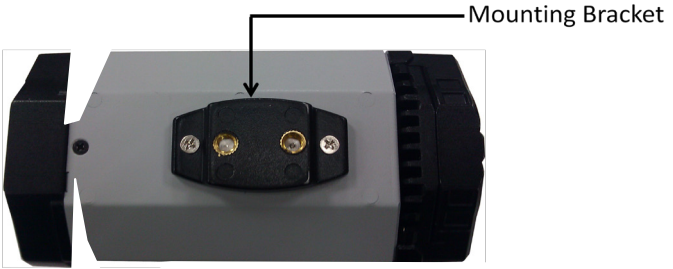**Vibration:** IEC 60068-2-6
Warranty: 5-year warranty

Product Description of the VPort 36-1MP

Top View

Bottom View

Mounting Bracket

NOTE You will find the mounting bracket fastened at the bottom of the camera. You can remove and reposition the bracket to the top of the camera to meet your deployment requirements..

- Auto Iris Socket: Plug auto-iris cable from camera lens to this socket for auto-iris function
- Lens Holder: Lens holder is designed for CS mount lenses, C/CS adapter is required if you want to use C mount lenses. Find more details in the HW installation section of this manual.
- SD Card Slot: Remove the SD card slot cover and insert an SD card for disconnection/event local storage
- Mounting Bracket Screw Hole: Screw holes for fastening mounting brackets.
- Reset Button: Use a pointed object to push down the reset button to reboot. Push and hold the button until system reboot to restore factory defaults.
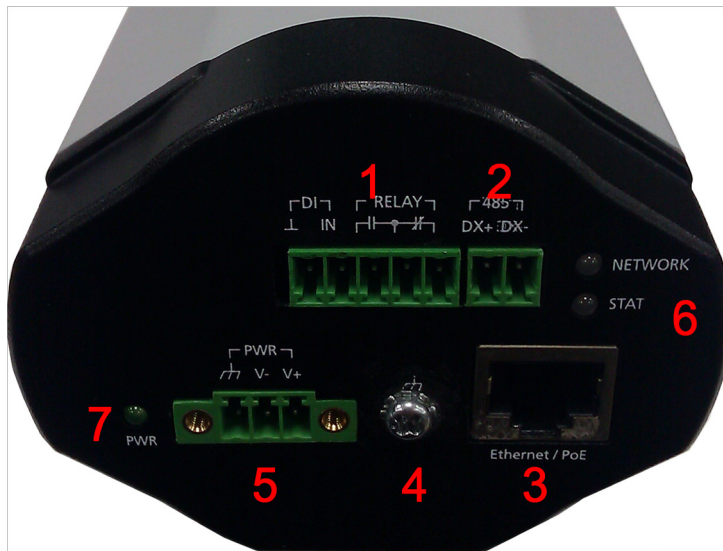
1. 5 pin terminal block for DI and relay connection
2. 2 pin terminal block for RS-485 pin connection
3. RJ45 port for PoE/non-PoE connection
4. Ground screw for connection grounding wire
5. 3 pin terminal block for power input
6. LED indicator to show network and system status. Green when normal.
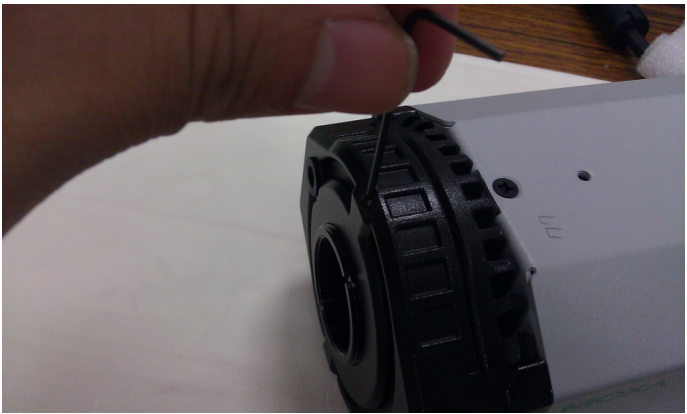7. LED indicator to show power status. Green when normal.

NOTE VPort 36-1MP can be powered by 12 VDC / 24 VDC / 24 VAC input or Power over Ethernet (PoE, 802.3af). You can install both to make a redundant power input.

Hardware Installation

Step 1: Remove lens cover
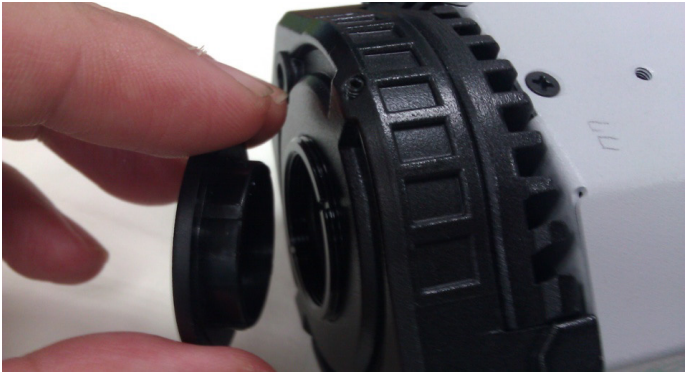
Step 2: Loosen the lens holder pressing screw with the L-type inner hexagon screw driver
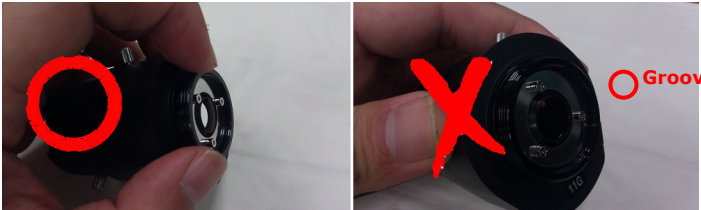
Step 3: Remove lens holder

NOTE Make sure to loosen the screw affixing the lens holder in step 2 before trying to remove the lens holder. The lens holder may be too tight to loosen if screw is not loosened first

Step 4: Screw lens holder to the lens you are going to use.

○ Groove

NOTE Observe carefully, make sure you screw lens holder to the lens by right side. The side of lens holder with groove should be facing the lens, the other side without groove should be facing outward.

Step 5: Screw lens and lens holder to VPort 36-1MP

NOTE You are suggested do this step while viewing live video from the camera via web browser, for instant feedback on when to stop. Make sure you don't screw all the way to the end, or the lens holder may fix to the camera when you remove the lens.

NOTE You can screw tight the lens holder pressing screw in step 2 to fix the position of lens holder and lens

Step 6: Power on your VPort 36-1MP

NOTE The VPort 36-1MP can be powered by 12 VDC / 24 VDC / 24 VAC input or Power over Ethernet (PoE, 802.3af). You can install both for a redundant power input.

Software Installation

Step 1: Configure the VPort 36-1MP's IP address

When the VPort 36-1MP is first powered on, the POST (Power On Self Test) will run for a few moments (about 30 seconds). The network environment determines how the IP address is assigned.
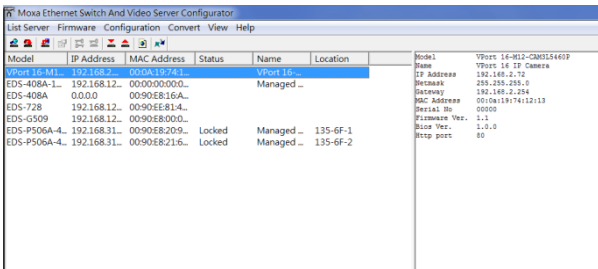
Network Environment with DHCP Server

For this network environment, the unit's IP address will be assigned by the network's DHCP server. Refer to the DHCP server's IP address table to determine the unit's assigned IP address. You may also use the Moxa VPort and Ether Device Configurator Utility (edscfgui.exe), as described below:

Using the Moxa VPort and EtherDevice Configurator Utility (edscfgui.exe)

Run the **edscfgui.exe** program to search for the VPort. After the utility's

window opens, you may also click on the **Search** button 🔍 to initiate a

search.

When the search has concluded, the Model Name, MAC address, IP address, serial port, and HTTP port of the VPort will be listed in the utility's window.

Users can double click the selected VPort, or use the IE web browser to access the VPort's web-based manager (web server).

Non DHCP Server Network Environment

If your VPort 36-1MP is connected to a network that does not have a DHCP server, then you will need to configure the IP address manually. The default IP address of the VPort 36-1MP is 192.168.127.100 and the default subnet mask is 255.255.255.0. Note that you may need to change your computer's IP address and subnet mask so that the computer is on the same subnet as the VPort.

To change the IP address of the VPort manually, access the VPort's web server, and then navigate to the **System Configuration → Network → General** page to configure the IP address and other network settings. Check the **Use fixed IP address** to ensure that the IP address you assign is not deleted each time the VPort is restarted.

Step 2: Accessing the VPort 36-1MP's web-based manager

Type the IP address in the web browser's address input box and then press enter.

Step 3: Install the ActiveX Control Plug-in

A security warning message will appear the first time you access the VPort's web-based manager. The message is related to installing the VPort AcitveX Control component on your PC or notebook. Click **Yes** to install this plug-in to enable the IE web browser for viewing video images.

NOTE For Windows XP SP2 or above operating systems, the ActiveX Control component will be blocked for system security reasons. In this case, the VPort's security warning message window may not appear. Users should unlock the ActiveX control blocked function or disable the security configuration to enable the installation of the VPort's ActiveX Control component.

Step 4: Access the homepage of the VPort 36-1MP's web-based manager.

After installing the ActiveX Control component, the homepage of the VPort 36-1MP's web-based manager will appear. Check the following items to make sure the system was installed properly:

1. Video Images
2. Video Information

Step 5: Access VPort's system configuration.

Click on **System Configuration** to access the overview of the system configuration to change the configuration. **Model Name**, **Server Name**, **IP Address**, **MAC Address** and **Firmware Version** appear in the green bar near the top of the page. Use this information to check the system information and installation.

For details of each configuration, check the User's Manual on the software CD.

Model Name : VPort 16-M12-CAM3L5460P	Server Name : VPort 16 IP Camera		
IP Address : 192.168.2.72	MAC Address : 00:0A:f8:74:12:53	Firm. Version : 1.1	Build : 11082017

Home
Main Menu
  OverView
  System
  Network
  DynaStream
  Video
  Alarm

Best viewed in IE 6.0 or above with resolution of 1280x1024

System Configuration

Welcome to the System Configuration pages. A brief description of each configuration group is given below. Click on a plus sign in the left pane to expand a group, and then click on the name you would like to open.

Category	Item		Description and Content
System	General		Setting Host Name and Date/Time
	Account		Administrator, User and Demo Account Privileges Management
	Local Storage		Set up the local storage capability
	Diagnosis		Self-diagnostic report with system, communication, power and IO status
	System Log		System Log and operation information
	System Parameter		System parameters information and Import/Export function
	Firmware Upgrade		Remote Firmware Upgrade
	Factory Default		Reset to Factory Default
	Reboot		Device will reboot for restarting system
Network	General		The IP network settings of this VPort
	SMTP Server		Set up Primary and Secondary SMTP Server and E-mail accounts
	FTP Server		Set up the Primary and Secondary FTP Server
	DDNS		Configure DDNS
	UPnP		Enable UPnP function
	Multicast		Set up Multicast (IGMP) Streaming
	Accessible IP		Set up a list to control the access permission of clients by checking their IP address
	SNMP		Configure the SNMP settings
	ToS		Configure ToS(Type of Service)
	HTTP Event Server		Set up the HTTP Event Server to send the event alarm action
	Modbus/TCP		Enable Modbus/TCP function
DynaStream	Basic		setup the video frame rate change once an alarm or event is triggered
	Conditions		setup the event/ alarm to trigger the Dynastream, and the behavior after being triggered
Video	Image Setting		Configure the attributes of video image
	Camera Setting		Configure the attributes of camera
	Video Performance		Set up the Encode Standard (MPEG or MPEG4), Size (Resolution), FPS and Video Quality
Alarm	Event Alarm	Basic	General settings of event alarm
		Schedule	Set up the Alarm schedule
		Motion Detection	Configure the motion detection alarm
		Video Loss	Configure video loss alarm
		CGI Event	Set up the CGI event alarm
		Sequential Snapshot	Set up the operation of Sequential Snapshot

Wiring Requirements

> ⚠️ **ATTENTION**
>
> **Safety First!**
>
> Be sure to disconnect the power cord before installing and/or wiring your Moxa VPort 36-1MP.
>
> Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.
>
> If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

You should also pay attention to the following:

• Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
• You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
• Keep input wiring and output wiring separated.
• It is strongly advised that you label wiring to all devices in the system when necessary.

Specifications

Camera	
Sensor	1/2.7" HD progressive scan CMOS
Lens	C/CS mount lens
Auto Iris Type	DC drive (lens not included when product delivery)
Illumination	Color: 0.2 lux at F1.2
	B/W: 0.05 lux at F1.2
Synchronization	Internal
White Balance	ATW/ AWB (rang 3200 ~ 10000 ºK)
Wide Dynamic	Color: 100 dB

Range	B/W: 110 dB
Electronic Shutter	AES: 1/30 ~ 1/25,000 sec Fix: 1/50,1/100,1/250,1/500,1/1000,1/2000,1/4000,1/10000 sec
Gamma Correction	0.45 or 1.0, default 0.45
S/N Ratio	50dB (Gamma, Aperture, AGC OFF, DNR ON)
ICR control	Auto(light sensor control) or DI control
DNR	Built-in DNR
WDR	On / Off
AGC Control	On / Off
Flickerless Control	On / Off
Backlight Compensation	On / Off
Auto Exposure	On / Off
Image Rotation	Flip, Mirror, and 180° rotation
Image Setting	Manually tuning with brightness, saturation, contrast and hue

Video

Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	Via Ethernet
Video Streams	Maximum 3 video streams (2x H.264 and 1x MJPEG) Stream 1: H.264, max resolution 1280x720 Stream 2: H.264, max resolution 720x480 Stream 3: MJPEG, max resolution 720x480 *Stream 2 and 3 must be the same resolution

Video Resolution and FPS		NTSC		PAL	
		Size	Max. FPS	Size	Max. FPS
	QCIF	176 x 120	30	176 x 144	25
	CIF	352 x 240	30	352 x 288	25
	VGA	640 x 480	30	640 x 480	25
	4CIF	704 x 480	30	704 x 576	25
	Full D1	720 x 480	30	720 x 576	25
	SVGA	800 x 600	30	800 x 600	25
	HD	1280 x 720	30	1280 x 720	25
	Up to 30/25 FPS for each of 3 independent streams at max resolution				

Video Viewing	DynaStream supported for changing the video frame rate automatically 3 privacy mask area provided Adjustable image size and quality Timestamp and text overlay Maximum of 10 simultaneous unicast connections ROI (Region of Interest) configuration for up to 3 area
PTZ	Digital PTZ

Network

Protocols	TCP, UDP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, IGMPv3, QoS,

	SNMPv1/v2c/v3, DDNS, Modbus/TCP, 802.1X, SSH/SSL
Ethernet	1 10/100BaseT(X) Ethernet port, RJ45 connector
Standard	OnVIF
Local Storage	
SD socket	Standard SD socket (SDHC)
GPIO	
Digital input	1, max. 8mA High: +13V to +30V Low: -30 to +3V
Relay output	1, max. 24VDC @ 1A
Serial Interface	
RS-485	1 full-duplex RS-485
LED Indicator	
STAT	Indicates if the system booted properly or not
Network	10Mbps or 100Mbps
Power	Power on/off
Power	
Input	12VDC/24VDC/24VAC or Power over Ethernet (PoE, 802.3af)
Physical Characters	
Housing	Metal housing, IP30 rated
Dimensions	78 x 65 x 150 mm
Installation	Wall mounting, ceiling mounting, pole mounting, corner mounting (Optional external housing and mounting accessory maybe required)
Security	
Password	User level password protection
Filtering	By IP address
Authentication	802.1X
Encryption	SSL/SSH
Alarm	
Intelligent video	Camera tamper / virtual fence / object counting / alert zone / missing object / Loitering object (IVA functions are optional except for camera tamper)
Video Motion Detection	3 independently configurable motion area
Scheduling	Daily repeat timing schedule
Imaging	JPEG snapshots for pre/trigger/post alarm images
Email/FTP messaging	Automatic transfer of stored images via email or FTP as event-triggered actions
Custom Alarms	HTTP event servers and CGI events for setting customized alarm actions
Pre-alarm Buffer	24 MB video buffer for JPEG snapshot images
Environmental Limits	
Operating Temperature	-40 to 75°C (-40 to 167°F) for T model 0 to 60°C (32 to 140°F) for non-T model
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Regulatory Approvals	

Safety	UL60950-1
	EN50121-4
	NEMA TS2
	Class 1 Division 2 (Pending)
	Atex Zone 2 (Pending)
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), Level 3
	EN61000-4-3 (RS), Level 3
	EN61000-4-4 (EFT), Level 3
	EN61000-4-5 (Surge), Level 3
	EN61000-4-6 (CS), Level 3
	EN61000-4-8,
	EN61000-4-11
Shock	IEC60068-2-27
Freefall	IEC60068-2-32
Vibration	IEC60068-2-6

Warranty

Warranty period	3 years
Detailed	See www.moxa.com/warranty

Minimum Viewing System Requirements

CPU: Pentium 4, 2.4 GHz
Memory: 512 MB of memory
OS: Windows XP/2000 with SP4 or above, Windows Vista, Windows 7
Browser: Internet Explorer 6.x or above
Multimedia: DirectX 9.0c or above

Software Utility

VPort SDK PLUS	includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third third-party developers (the latest version of SDK is available for download from Moxa's website).

Accessories

Enclosure	VP-CI701 (IP68 Indoor/Outdoor Housing)
Bracket	VP-CI800 (Wall Mount Bracket)
	VP-CI815 (Pole Mount Bracket)
Lens	VP-3112MPIR (2.6X 3.1mm-8mm F1.2 Day&Night Lens)