



## ITM-M-21A (PAL) ITM-M-22A (NTSC)

### B/W Camera Module with Microphone



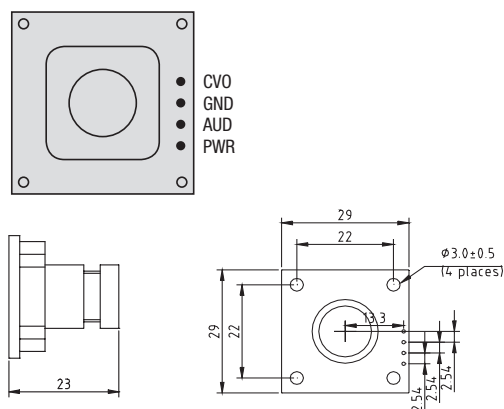
#### General Description

This is a family of products based on the most advanced CMOS mixed signal technology. It integrates image array, signal processing, timing and control circuitry, all on a single chip, enabling all aspects of B/W video camera applications. It is ideal for applications requiring a small footprint, low power and low cost.

#### Features

- Small size ..... (29 × 29 mm)
- Wide operation voltage..... (8 – 15V)
- Minimum external component
- Low power consumption..... <200mW
- Direct connect to standard video monitor
- On-chip auto exposure control
- Back light compensation
- Gamma correction ..... 0.45/1.0
- Auto gain control ..... 18dB
- Auto black level calibration
- External video signal capture capability

#### Layout and Dimensions [in mm]



#### Application Example

- Visual door phone · Video conferencing
- Security and surveillance · Portable security device
- Industrial machine monitoring · Process control
- Video Phone · Toys

#### Pin Description

- CVO Composite video output, can be directly connected to TV/monitor
- GND Common ground for power and video
- AUD Audio output, connect to speaker or TV audio in
- PWR DC Power supply 8V to 15V

#### Specification

Item	ITM-M-21A (CCIR)	ITM-M-22A (EIA)
Imager	CMOS image sensor	CMOS image sensor
Scanning	2:1 Interlace	2:1 Interlace
Shutter	1/60 to 1/15,000 sec	1/60 to 1/15,000 sec
Video Output	1V p-p composite video (75Ω)	
Picture Element	(H)628 × (V)582	(H)510 × (V)492
	365K pixel	250K pixel
Effective image area	5.78 × 4.19mm	4.69 × 3.54mm
S/N Ratio	>48dB (AGC on)	>48dB (AGC on)
Min Illumination	0.5 Lux at f1.2	0.5 Lux at f1.2
Resolution	400 TV line	400 TV line
Iris Control	Electronic	Electronic
Audio Output	1V p-p	1V p-p
Min Audio Input	10mV	10mV
Supply Voltage	8 – 15VDC	8 – 15VDC
Connectors	Video output, Video GND, DC power, GND	
Operating Temp	-10°C to 55°C	-10°C to 55°C
Humidity Limits	0 – 95%	0 – 95%
Lens (optional)	f3.7mm, F2.0, FOV 70° × 63°	
PCB Size	29 × 29 mm	29 × 29 mm
Fixed Pattern Noise	<0.03% Vp-p	<0.03% Vp-p
Dark Current	<0.2nA/cm <sup>2</sup>	<0.2nA/cm <sup>2</sup>
Dynamic Range	>72dB	>72dB