

Large city screen



***Full-color LED
Video screens,
Video signs and
Video banners***

***Stationary
Mobile
Outdoor
Indoor***

***ATV Outdoor Systems
www.aatv.ru***



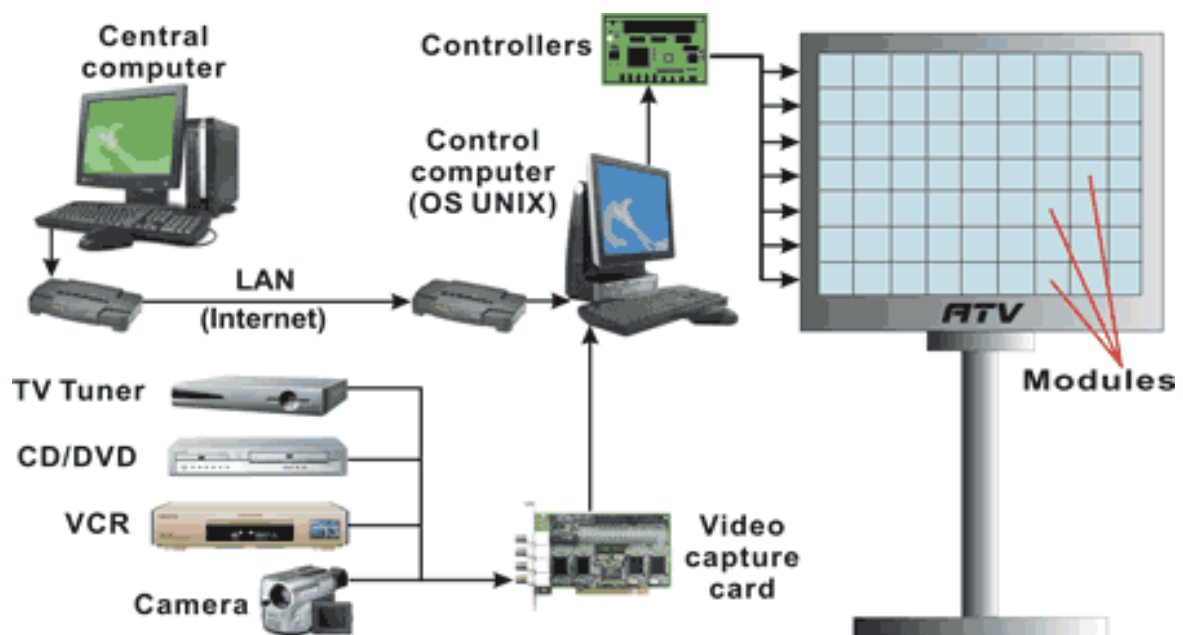
Large full-color LED video screen
5, Tverskaya, Moscow, Russia

With the appearance on the market of extra bright diodes, full colored LED screens almost fully substituted their predecessors - lamp screens, due to their reliability, quality of image, high resolution and low energy consumption.

Apart from dynamic advertisement, LED screens are used for broadcasting live events, street shows and city celebrations.

LED screens connected into network are controlled by the central computer that transfers information and broadcasting schedule to the control computer on each screen.

SMD diodes, new product on the market, (3 diodes in one case) allow to construct small video screens with high resolution for the indoor use. Typical applications are concert and sport halls, television studios, conference and convention centers, airports and train terminals.



Schematic diagram of the LED screen

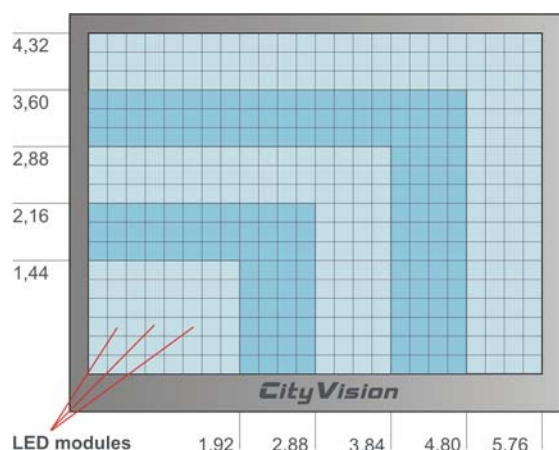
LED screen applications

- Outdoor dynamic advertisement
- Crowded areas, concert halls, holiday resorts
- Presentations
- Exhibitions
- Meetings
- Train stations, airports
- Metro stations
- Sport arenas and halls
- Congested city streets and squares
- TV studios
- Modern dynamic video banners

Major advantages of the LED screens

- Broadcasting of live video and dynamic advertisement
- High image quality
- Modular construction of screens
- High resolution (up to 1280 x 960 pixels)
- Extra bright LED
- High reliability and durability
- High brightness and contrast of the image
- Possibility to increase screen size during upgrade
- Possibility to link screens into network
- Quick substitution of models
- Easy maintenance

Modular construction of screens



Standard - 4:3 aspect ratio

Module - 15 mm pitch, 16x16 pixels, Size: 240 x 240 mm			
Number of modules	Screen size, m	Image area, sq.m	Resolution, pixels
8 x 6	1,92 x 1,44	2,76	128 x 96
12 x 9	2,88 x 2,16	6,22	192 x 144
16 x 12	3,84 x 2,88	11,06	256 x 192
20 x 15	4,80 x 3,60	17,28	320 x 240
24 x 18	5,76 x 4,32	24,88	384 x 288

Advantages of the modular structure

- Construction of screens of different sizes and resolutions
- Possibility to increase size during upgrade
- Construction of screens of different forms and shapes
- Construction of high resolution screens
- Easy assembly and servicing
- Exchangeability of the modules
- Easy localization of errors
- Possibility of constructing mobile and easily assembling screens

It should be also mentioned that it is necessary to keep 4:3 aspect ratio for live video broadcasting on the video screen. Otherwise the image is going to be distorted or shown on the different parts of the screen.

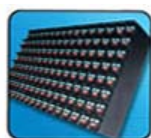
On the picture (left above) there is an example of construction of the video screen's modules with the linear size 480 x 480 mm, pixel pitch 15 and 4:3 aspect ratio.

Linear sizes, image area and resolution of the screen are shown in Table (left).

Modules with different pixel pitch allow to assemble a video screen with any linear size and resolution you need.

Note: All data in tables are for reference only. If you want to get more information about modules produced by ATV you can visit our web site or send your request to us.

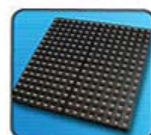
Modules for video screens



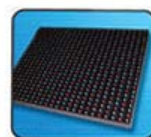
Modules –segments for building screens of all sizes and resolution (like building blocks)

Essential parameters of a module:

- Pitch (distance between pixels, mm)
- Resolution (number of pixels in a module)
- Linear size (height and length)
- Brightness in cd/sq.m (nit)
- Viewing angles (horizontal and vertical)
- Pixel composition (number of LEDs that make up a pixel)



However pitch is the primary feature. The smaller the pitch, the higher the resolution within the same physical dimensions. Most typical pitches used for screens are: 10, 12.5, 15, 20, 25 and 38 mm.



With the appearance of SMD LED (3 LEDs – red, green and blue – in the same case) it became possible to start production of modules with the pitch smaller than 10 mm.



Pixel composition (example):
 2R – 2 red LEDs
 1G – 1 green LED
 1B – 1 blue LED

Technical data of some modules for outdoor screens

Model	Type	Pixel configuration	Number of pixels	Pitch, mm	Size, mm	Brightness, cd/m2	Viewing angle		Weight, kg	Power, W	Temperature range
							Vert.	Hor.			
m15-16x16	Outdoor	1R-1G-1B	16 x 16	15	240 x 240	5000±10%	60°	120°	2,0	80	-40°...+50°C
m19-16x16	Outdoor	1R-1G-1B	16x16	19	304x304	5000±10%	60°	120°	2,2	80	-40°...+50°C
m22-8x8	Outdoor	2R-1G-1B	8 x 8	22	176 x 176	5000±10%	60°	120°	1,0	20	-40°...+50°C
m30-8x8	Outdoor	2R-1G-1B	8 x 8	30	240 x 240	5000±10%	45°	60°	1,5	20	-40°...+50°C
m38-8x8	Outdoor	2R-1G-1B	8 x 8	38	305 x 305	5000±10%	45°	60°	1,7	20	-40°...+50°C

Note: All data in tables are for reference only. If you want to get more information about modules produced by our company you can visit our web site or send your request to us.

Technical data of most common video screens' models

Table 1: Video screens on the base of the module m22-8x8 (pitch 22 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m.	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-22/13d	24	18	432	192x144	4,22x3,17	13,38	27 648	490	9,0	4,5
ATV-22/18d	28	21	588	224x168	4,93x3,7	18,21	37 632	665	12,0	6,0
ATV-22/24d	32	24	768	256x192	5,63x4,32	23,79	49 152	870	16,0	8,0
ATV-22/37d	40	30	1 200	320x240	7,04x5,28	37,17	76 800	1 360	24,0	12,0
ATV-22/84d	60	45	2 700	480x360	10,56x7,92	83,64	172 800	3 055	54,0	27,0

Table 2: Video screens on the base of the module m15-16x16 (pitch 15 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-15/11d	16	12	192	256x192	3,84x2,88	11,06	49 152	485	16,0	8,0
ATV-15/17d	20	15	300	320x240	4,8x3,6	17,28	76 800	760	24,0	12,0
ATV-15/34d	28	21	588	448x336	6,72x5,04	33,87	150 528	1 485	47,0	23,5
ATV-15/69d	40	30	1200	640x480	9,6x7,2	69,12	307 200	3 030	96,0	48,0

Table 3: Video screens on the base of the module m19-16x16 (pitch 19 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-19/18d	16	12	192	256x192	4,86x3,65	17,74	49 152	525	16,0	8,0
ATV-19/28d	20	15	300	320x240	6,08x4,56	27,72	76 800	820	24,0	12,0
ATV-19/54d	28	21	588	448x336	8,51x6,38	54,34	150 528	1 605	47,0	23,5
ATV-19/90d	36	27	972	576x432	10,94x8,21	89,83	248 832	2 650	78,0	39,0

Table 4: Video screens on the base of the module m30-8x8 (pitch 30 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-30/17d	20	15	300	160x120	4,8x3,6	17,28	19 200	505	6,0	3,0
ATV-30/34d	28	21	588	224x168	6,72x5,04	33,87	37 632	985	12,0	6,0
ATV-30/69d	40	30	1 200	320x240	9,6x7,2	69,12	76 800	2 010	24,0	12,0

Note: Viewing angle horizontally 60° and vertically 45°

Video screens on the base of the module m38-8x8 (pitch 38 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-38/54d	28	21	588	224x168	8,51x6,38	54,34	37 632	1 105	12,0	6,0
ATV-38/90d	36	27	972	288x216	10,94x8,21	89,83	62 208	1 825	20,0	10,0
ATV-38/111d	40	30	1 200	320x240	12,16x9,12	110,90	76 800	2 250	24,0	12,0
ATV-38/217d	56	42	2 352	448x336	17,02x12,77	217,36	150 528	4 410	47,0	23,5

Note: Viewing angle horizontally 60° and vertically 45°

Notes to Tables 1-5:

- Brightness - 5 000 ± 10% cd/m²
- Viewing angle horizontally 120° and vertically 60° (except Tables 4 and 5 – see Note)
- Screen aspect ratio - 4:3 (TV standard)
- Weight of the screen does not include weight of support frame
- Power consumption does not include ventilation and heating systems
- Advanced LED systems mentioned in the table are manufactured using products of American, European and Japanese LED suppliers.
- Calculation for non-standard image areas (which are not included in the table) will be made at customer's request.