



twenty[®]·sub

user guide

No.

Hand built by

Date

IMPORTANT



Warranty Certificate

Please take a few moments to complete the warranty card at the back of this booklet (or register at www.pmc-speakers.com) as this not only records the purchase of your loudspeakers, but also provides you with an opportunity to make suggestions and provide feedback directly to PMC.

Product Support

For product support, accessories or servicing advice, please contact a PMC authorised dealer/distributor. See www.pmc-speakers.com and click on 'Where to buy'.

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PMC stock code: 14838 Ref. no - 677

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CE Conformity: PMC active loudspeakers conform to EC Directive LVD2006/95/EC and EMC 2004/108/EC.

WEEE European directive: PMC is a member of a National Compliance scheme and has gained the associated certification of compliance from the Environment Agency with the registration WEEE/GJ0101WU.

WEEE EU Directive

This symbol on the product, and in or on its packaging, indicates that this product must not be disposed of with other household waste. It is the responsibility of the owner to dispose of waste equipment via a designated collection point for the recycling of waste electrical and electronic equipment. The recycling of waste equipment is an attempt to conserve natural resources and ensures that it is recycled in a manner that protects human health and the environment. For more information about where to dispose of waste equipment for recycling, please contact your local waste/recycling authority or the dealer from whom you purchased the product.



A message from Peter Thomas –



Peter Thomas
Owner & Chief Designer



Our sole aim while designing loudspeakers is to recreate the true essence of an artist's intention, combining the ultimate level of sonic resolution with solid engineering principles.

We believe that the same loudspeaker can be used throughout the entire audio chain, from composer to studio or film stage, post-production or mastering and then, finally, the consumer. Our unswerving passion for getting it right has made this goal possible.

Thank you for choosing PMC products. It is now time for you to read the user guide, install your new **twenty** series speakers, and realise just how much you've been missing.

A handwritten signature in a cursive, light gray font that reads "P. Thomas". The signature is fluid and personal, with a large, stylized 'P' and 'T'.

Congratulations - You have joined the elite

PMC: the authority for quality sound.

Prince

Stevie Wonder

ESPN

BBC

Tony Bennett

JVC Studios

EMI

SONY

Coldplay

elbow

Over more than two decades PMC has earned an unrivalled reputation for creating the world's finest professional loudspeakers. Simply put, our loudspeakers provide a reference for the world's highest profile productions and events. They are found at every stage of the creative process, from conception to recording and broadcast and, of course, in the home.

Our client list reads like a who's who of the sonically aware, with Prince, Elbow, Stevie Wonder, Coldplay, Brian May, Universal, EMI, Sony, Pinewood Studios, Dreamworks, Capitol Studios and the BBC among the makers of movies and music who use our products.

Our loudspeakers were also used in the production of Titanic, Spiderman III, Iron Man 2, Finding Nemo, Pirates of the Caribbean III, and during broadcasts of the London Olympics, 2012.

UNIVERSAL MUSIC GROUP

Thomas Newman

Brian May

Kraftwerk

Royal College of Music

Warner Music

PINEWOOD STUDIOS

Capitol **STUDIOS**

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User guide

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General usage guidelines

- 1 Read these instructions and keep them in a safe place for future reference.
- 2 Heed all electrical safety warnings, including any on the loudspeaker itself.
- 3 Do not use the loudspeakers near water.
- 4 We have provided a high quality Microfiber cloth for cleaning. This is ideal as the cabinet should only be cleaned with a dry, lint-free, cloth. Do not use solvents, abrasives, waxes or liquids as they may be detrimental to the finish.
- 5 Floor spikes are sharp and should be treated with great care during installation and use.
- 6 Do not install near any heat sources such as radiators, ovens, other equipment that produce excessive heat, or in unventilated soffits or enclosures.
- 7 Unplug this product from both source and power during electrical storms or when unused for extended periods of time.
- 8 Packing material can pose danger to the young and vulnerable. Ensure these items are kept or disposed of safely.
- 9 High volume audio signals, however short their duration, have the potential to cause hearing damage. Use care when setting the system volume level to ensure playback sound pressure levels remain within safe comfortable limits.
- 10 Do not attempt to service the equipment. There are no user serviceable parts inside. Please refer all servicing to PMC authorised personnel.
- 11 Servicing is required when the apparatus is damaged, exposed to moisture, or exhibits a distinct or sudden change of operation or audio performance.
- 12 PMC has made efforts to provide accurate installation information and good quality fixings. PMC LTD will not be held responsible or liable for injuries or property damage - direct, indirect or consequential - arising out of use or inability to use this product safely and properly.
- 13 The **twenty** subwoofer contains very powerful magnets and therefore may have a detrimental effect if left in close proximity to magnetically sensitive items such as; CRT (tube style) televisions or monitors and media such as floppy discs, cassettes and videotapes.

Introduction

Thank you for choosing the PMC **twenty** active subwoofer. This guide provides installation and operating instructions.

This active subwoofers can be used in a 2.1 configuration with **twenty series** speakers to gain extra bass extension and headroom, or they can be used to reproduce a low frequency effects (LFE) channel in a surround system. Numerous configurations are possible, some of which are illustrated in this guide.

The electronics built into the subwoofer cabinet include an ultra-low distortion Class-D power amplifier, with DSP-based gain, filtering, and bass management functions when the signal is routed via the **twenty sub**. Balanced stereo analogue and AES3 digital inputs are accepted to feed the subwoofer system, and these input signals are also passed through to the analogue and digital outputs for connection with other devices. The outputs can be unprocessed or high-pass filtered, and with fixed or variable gain.

The input source, analogue input sensitivity, gain trim, and overall volume are all adjustable, as are the subwoofer's low-pass filter slope and frequency. Additionally, the phase can be adjusted and a single parametric equaliser is provided to assist with in-room alignment. The analogue and digital outputs can be high-pass filtered, if required, to feed satellite speakers in a 2.1 configuration.

This subwoofer builds upon PMC's world-class design pedigree, combining the finest drivers available with the unique **ATL™** (Advanced Transmission Line) bass loading principle, sophisticated Class-D amplification, and ultra-precise DSP control. PMC's unique **ATL™** technology uses contemporary materials to provide optimised absorption of unwanted low-midrange energy within the cabinet, while extending bass output significantly with negligible harmonic distortion.

The two long-throw bass drivers employed in the **twenty** subwoofer are a bespoke PMC design using natural materials, with an ultra-light and ultra-stiff doped-paper cone to deliver unparalleled transient response. The **twenty sub** cabinet has a small footprint, making it more convenient and easier to place than typical cube-shaped designs.

Advanced Transmission Line

How it works



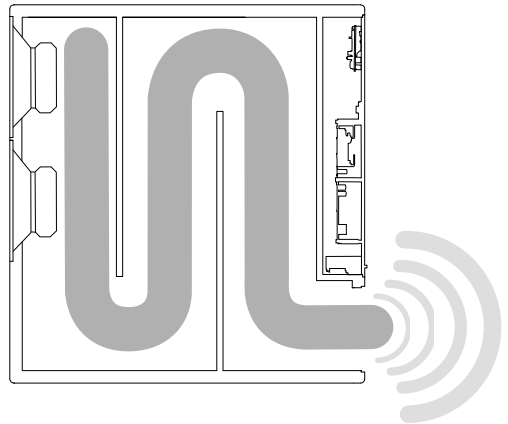
PMC's unique **ATL™** (Advanced Transmission Line) enclosures have taken loudspeaker design to the highest level, using sophisticated cabinet construction, proprietary drive units, and patented absorption materials and techniques. The benefits are enormous compared to the relatively simple sealed and ported designs currently available elsewhere.

PMC's innovative approach places the bass drivers near one end of a long cavity (the Advanced Transmission Line). This cavity is heavily damped with acoustic material specified carefully to absorb the upper bass and higher frequencies radiating from the rear of the bass driver. The lowest frequencies are allowed to pass down the line and emerge from the large rear vent which acts essentially as an extra bass driver.

An important benefit of the **ATL™** approach is that the air pressure inside the cabinet, which loads the bass driver, remains consistent. This helps to maintain control of the driver over a wide frequency range and significantly reduces LF distortion. Consequently, the upper bass detail is not masked by harmonic distortion and the result is PMC's characteristically fast, attacking bass, and outstanding clarity.

A further advantage of the ATL design approach is greater bass extension and higher SPL capability compared to typical ported or sealed designs of a similar size – even if similar drivers were used.

Moreover, the very consistent bass driver loading brings the welcome benefit that the frequency response remains consistent regardless of listening level, and analytical auditioning can be conducted without needing high replay volumes just to achieve an optimal bass response. This is a unique and very valuable characteristic of PMC's Advanced Transmission Line.



'No other bass loading technology provides such resolution and tonal accuracy at all volume levels'

System description

The **twenty** active subwoofer has a powerful DSP engine, operating at a fixed sample rate of 96kHz.

The two balanced analogue inputs are conditioned by an adjustable low-noise gain stage prior to A-D conversion to optimise the signal-to-noise ratio. The converter is a very high quality delta-sigma device, producing a 24-bit, 96kHz output. The left and right channels are summed to drive the subwoofer speakers, but passed on as separate signals to the analogue outputs.

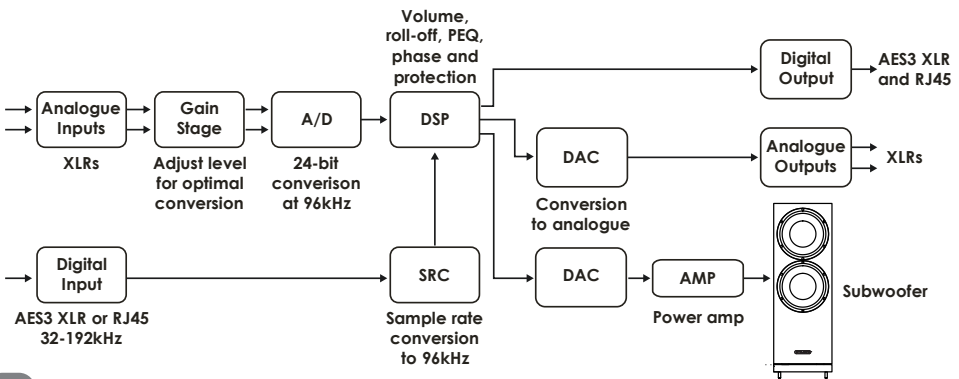
The AES3 digital input accepts sample rates up to 192kHz, and is sample rate converted to 96kHz automatically. Either channel, or a sum of both, can be selected to drive the subwoofer, and both are passed on to the digital output.

The DSP engine provides the system volume control, low-pass filtering, parametric

equalisation, and phase alignment for the subwoofer, as well as high-pass filtering bass management options for the analogue and digital outputs. It also provides non-invasive excursion limiting to protect the drivers.

The DSP system generates three sets of outputs. In addition to the digital output, there are two separate D-A converters. One converter provides the analogue outputs, while the other feeds a 400W Class-D power amplifier connected to the loudspeaker(s).

The analogue and digital outputs are always available and can be formatted to provide either full range or high-pass filtered signals, which can be used for satellite speakers or other destinations. The output level can be fixed, or follow the system volume control setting.



Unpacking and care

The PMC **twenty** active subwoofer is packed in a heavy-duty protective carton. Please retain the carton to ensure that the loudspeaker can be transported safely if the need arises in the future. If you dispose of the packaging please do so in an environmentally responsible and safe way.

What's in the Box?

- 1x **twenty sub**
- 1x **twenty sub** plinth with 4 cork isolators
- 1x Grille
- 4x M8 spikes, nuts and washers
- 4x M8 countersunk bolts
- 1x AC mains power cable
- 2x RCA - XLR phono adapter
- 1x Cleaning cloth
- 1x User Guide



- **The twenty sub is heavy. Please take care when lifting from the carton.**
- **Do not attempt to use the loudspeaker if the packaging has been water-damaged.**
- **Please Note: This unit must be earthed**

Care and Service

In normal usage PMC speakers should provide many years of trouble-free operation, but in the unlikely event that you suspect damage or failure has occurred do not attempt to repair the unit yourself. There are no user-serviceable parts inside. Contact your dealer for advice and a service return address.

Clean the cabinets with a dry and lint-free cloth, and avoid the use of solvents as they may damage the finish of the unit.

Resonance absorbing plinth installation guide

A resonance damping plinth and spikes enhance the performance and stability of the **twenty sub**. The plinth attaches to the base of each speaker using 4 x M8 countersunk bolts. The **twenty** series spikes are reversible, with spike or ball tips for use on either carpeted or more sensitive hard flooring.

- 1 Carefully invert the subwoofer so that its base is uppermost. Take care not to damage the top of the loudspeaker when it is upside-down, the use of a soft cloth or square of carpet is suggested.
- 2 Position the plinth on the bottom of the subwoofer so that its large curved edge is to the rear (same face as terminals/sockets). Ensure that the corresponding inserts in the base of the cabinet are aligned with the rebated holes in the plinth.
- 3 Locate the large M8 bolts and tighten them **gently** using the allen key supplied until the heads of the bolts are flush with the plinth's surface. Once the bolts are flush carefully tighten each bolt by **half a turn**
N.B. Do not over tighten. Over tightening will reduce the effect of the resonance absorbing material
- 4 Fully thread each spike with one of the supplied lock nuts. The spikes can then be attached to the plinth; they should point upwards whilst the cabinet is inverted.



Caution: the spikes are sharp and should be treated with great care and may damage hard flooring if in direct contact

N.B. You have the option of using the ball tips for use on more sensitive flooring



- 5 Re-invert the loudspeaker so that the spikes and plinth are at the bottom.
- 6 Once in position, level the loudspeaker by adjusting each spike in turn.
- 7 The final step is to tighten each spike's lock nut gently with the spanner provided; this will ensure that the spike and subwoofer are as rigid as possible. Over tightening will not improve performance.

Connections



Caution

To avoid potential damage, please ensure that the signal source is turned off before connecting or disconnecting your **twenty** active subwoofer..

Connections

The rear panel of the **twenty sub** features the following connections:

Audio

2 x Balanced analogue XLR inputs

If you are using an unbalanced Phono/RCA analogue connection, use the Phono/RCA to XLR converters included.

1 x AES3 digital balance input

The balanced connections are wired: pin-1 screen (ground), pin-2 positive, and pin-3 negative.

The input is selected via the rear panel menu system.



N.B. Each input has a corresponding output which can provide either the full range signal or a high-pass filtered version, selected via the menu system (see page 17).

Power

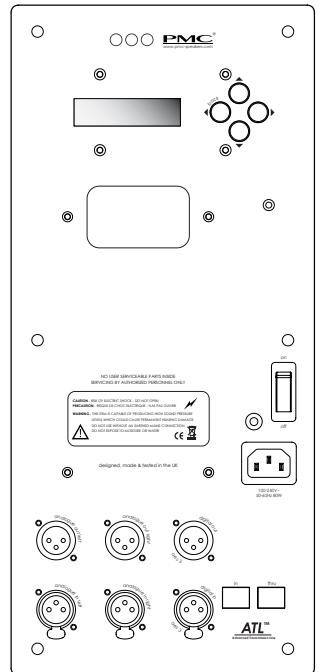
IEC (C14) mains socket with power switch. The **twenty sub** accepts AC mains voltages between 90-132 and 180-264V.

THIS UNIT MUST BE EARTHED

In – Thru Connections

These connections serve no function in a domestic/consumer system. These would only be utilised in a specialist professional recording studio environment

– Do not use.



Positioning and alignment

With their unique **ATL™** cabinet design, ultra-low distortion, and smooth bass roll-off, PMC loudspeakers are more forgiving of difficult room conditions and placement constraints than conventional designs. However, we encourage you to spend some time experimenting in your own room to achieve the very best results, remembering that small changes in location can often influence system performance significantly. The following guidelines are suggestions for a starting point to locate your new subwoofer and optimise its alignment. Fine-tuning can start from there.

Positioning

Since the **twenty** active subwoofer reproduce frequencies below 150Hz, they don't contribute information towards stereo imaging, and can therefore be placed independently of the main satellite stereo loudspeakers. However, the ideal positioning will be affected by the nature of the room's standing waves.

A simple way of finding the optimal location for the subwoofer is to place it initially at the listening position. Play music or test signals with wide ranging bass notes and move around the potential subwoofer locations listening for the position which gives the most uniform sound with minimal boomy or weak notes. The subwoofer can then be relocated to the most uniform position. Ideally, this will be close to the front wall and somewhere between the two front speakers, but not on the exact centre line.

Alignment/tuning

Once the optimal location has been decided, the subwoofer's electrical tuning can be performed. The first parameter to adjust is the low-pass filter frequency and roll-off. These should complement the satellite speaker's low-frequency roll-off.

Next, the Phase can be aligned to ensure that the subwoofer signal through the crossover region arrives at the listening position in-phase with the satellite speakers. A test signal (sine wave tone) can be used at a frequency which will be reproduced by both the satellite speakers and subwoofer – typically around 85Hz. The phase control (and if necessary the polarity inversion) should be adjusted to make the tone as loud as possible, indicating proper alignment.

Finally, the level of the subwoofer can be adjusted to provide a smooth and balanced extension to the low-frequency performance of the satellite speakers. When set correctly you will be almost unaware of the subwoofer's contribution, noticing its absence when switched off. If you are aware of it in normal use it is probably turned up too loud!

Operational controls

The **twenty** active subwoofer is configured and controlled via a simple menu system which is viewed on the rear panel display and navigated by four associated push-buttons.

Looking at the four cursor buttons, the left and right buttons step back (exit) and select (enter) the menu options, respectively, while the upper and lower buttons scroll through the various menu options and adjust the parameter values. The menu structure is simple, logical and intuitive, and uses clear display legends to indicate the selected function and parameter.

When the **twenty** active subwoofer is connected to a mains supply it will power-up with the default display. Pressing any of the four rear panel buttons will turn the system on. The factory default settings will initially configure the subwoofer to use the analogue XLR inputs, with the input sensitivity set to +12.5dB, Trim 0dB, all the equalisation set flat, backlight timeout 2 minutes, and the volume set to -20.5dB.

Factory Reset

The factory default settings can quickly be restored by pressing and holding the Up and Down buttons simultaneously for more than 2 seconds.

Default Display

With the loudspeaker switched on, the LCD window normally indicates the current volume level and the selected low-pass filter frequency and slope. The system volume is indicated in decibels on the upper line of the display, within the range -48.5 to +15dB. To increase or decrease the current volume level press the up/down buttons. The LF roll-off settings are displayed on the second line, with the roll off frequency followed by the slope.

V	o	l	u	m	e	-	2	0	.	5	d	B		
L	F		R	o	l	l		O	f	f				

Power Mode

By pressing the right (enter) button, the next menu level is accessed which accesses the power standby mode. By pressing the right button again, power standby is selected and the LCD will show 'Zzz' to indicate the standby (Sleep) condition. The backlight will switch off.

Z	z	z												

NOTE: The loudspeaker can be activated again by pressing any rear panel button.

Setup Mode

Pressing the right (enter) button twice from the default volume display accesses the Setup menu, and the up/down buttons can then be used to access the various options.

S	e	t	u	p													
+	1	0	d	B		G	a	i	n								

After selecting the desired option pressing the right button again displays the current parameter value, and the up/down buttons can be used to alter the value. Pressing the left (exit) button exits the parameter level and allows other options to be selected.

+	1	0	d	B		G	a	i	n								
O	f	f															

Set Up Menu Options:

+10dB Gain	Introduces +10dB gain to suit Dolby Digital LFE requirements
Phase Rev	Polarity inversion, Off or On
Phase	Phase alignment from 0 to 180 degrees in 5 degree increments
Paramtric EQ	Switches single parametric EQ band Off or On
PEQ Gain	Adjusts parametric EQ gain (-8.00dB to +7.87dB)
PEQ Frequency	Adjusts parametric EQ centre frequency (20Hz to 150Hz)
PEQ Q	Adjusts parametric EQ bandwidth (Q=1 to 8)
BL Timeout	Sets the time after which the LCD backlight will switch off. Options: 30 sec, 2 min, 5 min, off (no timeout)
Trim	Input trim level (-8.00dB to +7.87dB)
Analogue In Sens	Input sensitivity (+4dB to +20dB)
Source	Selects input source (Analogue XLR, AES3 Left Channel, AES3 Right Channel, AES3 L+R)
LR Out Level	Fixed or variable
LR Out Response	Filtered or Full Range
LF Rolloff Slope	Off, or 18, 12 or 6dB/Octave
LF Rolloff Freq	Selects the low-pass roll-off turnover frequency Frequency options: 50, 80, 120, 150, or 200Hz

Default Display	Up/Down	Press Right	Up/Down	Press Right	Display	Up/Down	Press Right	Up/Down	Default
Volume +xx.xdB*	-48.5 to +15dB	-	PMC sub Setup	-		+10dB Gain	-	Off / On	-20.5dB Off
LF Roll Off Hz / xx **						Phase Reverse	-	Off / On	Off
						Phase	-	0 – 180 degrees	0
						Parametric EQ	-	Off / On	Off
						PEQ Gain	-	-8.00dB to +7.87dB	0
						PEQ Freq	-	20Hz – 150Hz	20Hz
						PEQ Q	-	1 – 8	1
						BL Timeout	-	2 min 30 sec	2 min
						Trim	-	Off (no timeout) 5 Min	0
						Analogue In Sens	-	+4dB – +20dB	+12.5dB
						Source	-	Analogue AES3 Chan L+R AES3 Chan Right AES3 Chan Left	Analogue
						LR Out Level	-	Fixed / Variable	Fixed
						LR Out Response	-	Filtered / Full Range	Filtered
						LF Roll-off slope	-	Off	Off
								18dB/Oct	
								12dB/Oct	
								6dB/Oct	
						LF Roll-Off Freq	-	50Hz 200Hz 150Hz 120Hz 80Hz	50Hz
			PMC sub Power Off	-	Zzz				

* 1st amplifier in chain is master volume controller

** 2nd line of display shows LPF roll-off frequency and slope in dB/octave

All menus return to default after 60 seconds of button inactivity

Pressing volume up and volume down together >2 sec whilst in default menu returns menus to factory defaults

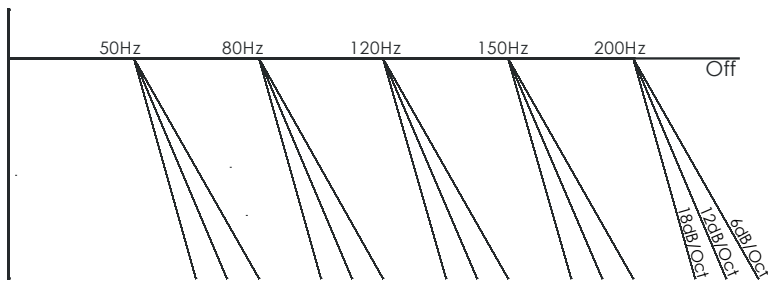
First power-up from the mains switch boots speaker and default display

User EQ options

Integration with satellite speakers

PMC's **twenty** active subwoofer features DSP-based user-equalisation options. These comprise an adjustable low-pass filter to determine the frequency range over which the subwoofer operates, with an adjustable slope which allows perfect integration with the low-frequency response of the satellite speakers.

The low-pass filter can be switched off, or configured with a slope of 6, 12, or 18dB per octave, and with turnover frequencies of 50, 80, 120, 150, or 200Hz, as illustrated in this diagram.



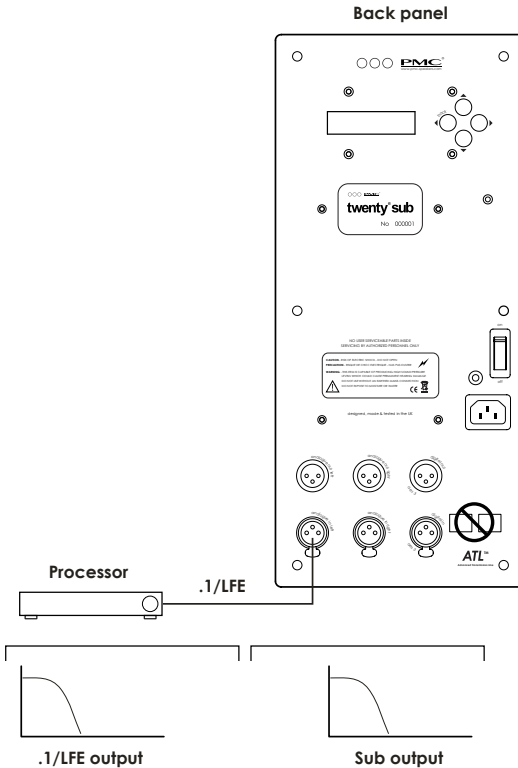
When using the **twenty** active subwoofer with any other model from the **twenty** series range, we recommend starting with a low-pass filter setting of 80Hz. However, you may adjust this setting as room conditions and personal preferences dictate (see pages 19 & 20 for initial set ups with **twenty** series products).

Integration - Initial setup settings

Surround processor/receiver setup

Use processor controls to integrate the sub with your system

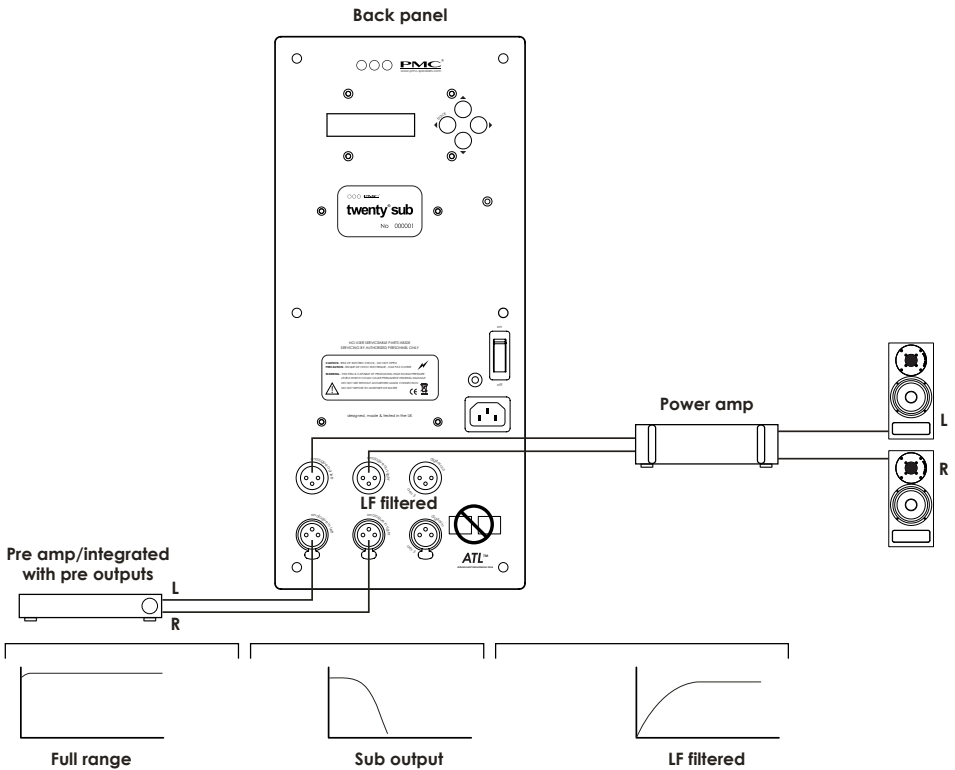
Partnering twenty model	Processor speaker setting	LF roll-off slope
twenty.21	Small, 80hz	Off
twenty.22	Small, 80hz	Off
twenty.23	Large	Off
twenty.24	Large	Off
twenty.26	Large	Off
twenty.C	Small, 80hz	Off



Integration - Initial setup settings (continued)

2.1 setup with stereo speakers

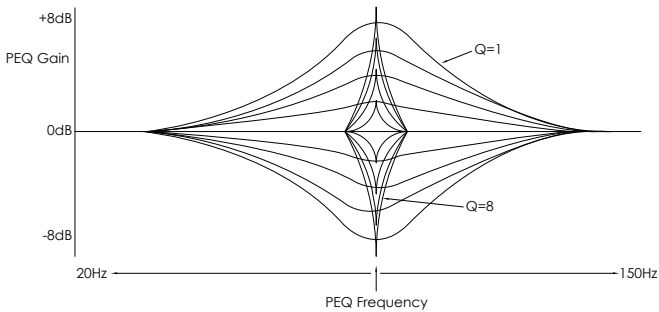
Partnering twenty model	LF roll-off frequency	LF roll-off slope	Left & right output response
twenty.21	80hz	12dB/Oct	Filtered
twenty.22	80hz	6dB/Oct	Filtered
twenty.23	80hz	6dB/Oct	Filtered
twenty.24	80hz	6dB/Oct	Full Range
twenty.26	50hz	6dB/Oct	Full Range



Advanced room integration using the on board parametric EQ

A single-band parametric equaliser can be used to compensate for single resonances or dips in the room response, assisting with in-room alignment.

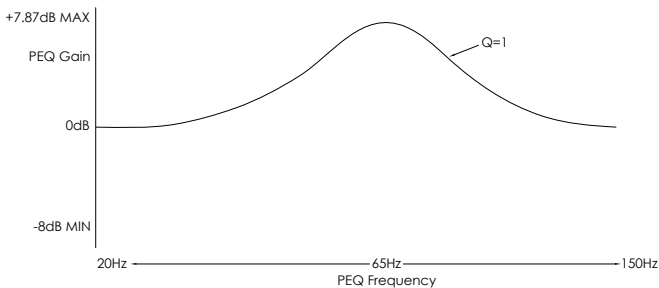
The centre frequency of the single-band parametric equaliser (PEQ) is adjustable between 20Hz and 150Hz (in 5Hz increments). The bandwidth is variable between $Q=1$ to 8 in 0.5 steps (equivalent to bandwidths of 1.4 to 0.2 octaves). The PEQ gain can be adjusted between a boost of up to +7.87 and a cut of up to -8dB.



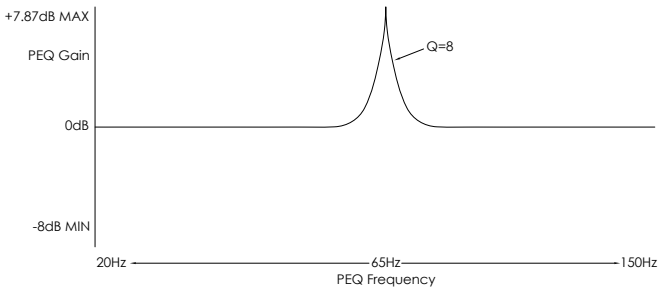
A separate high-pass filter option is included for bass-management of the output signals which may be passed on to satellite loudspeakers. The high-pass filter turnover frequency and slope mirrors the selected low-pass filter settings.

Example response curves to compensate for room peaks or dips in bass response

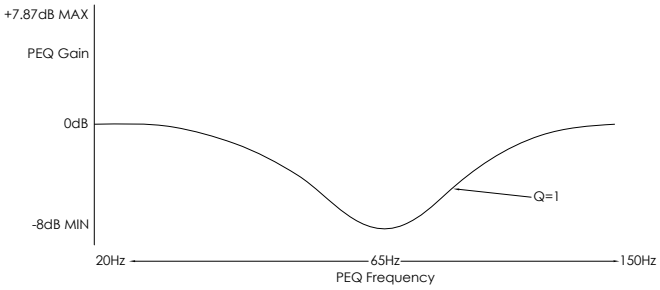
An example of a 7.87dB boost at 65Hz with a Q of 1 - wide bandwidth boost at 65Hz



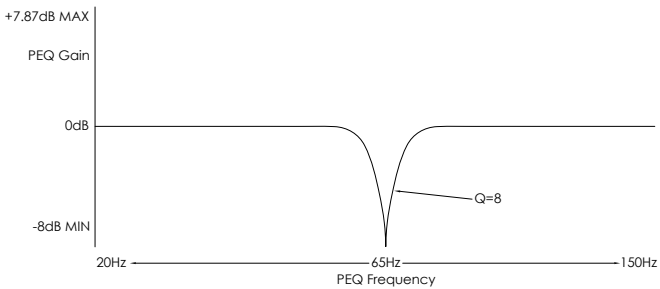
An example of a 7.87dB boost at 65Hz with a Q of 8 (a narrow bandwidth boost at 65Hz)



An example of a -8dB cut at 65Hz with a Q of 1 (a wide bandwidth cut at 65Hz)



An example of a -8dB cut at 65Hz with a Q of 8 (a narrow bandwidth cut at 65Hz)



Running in



When loudspeakers are new they will take time to reach their full potential.

It is often debated whether any solid-state equipment, such as CD players or transistor-based power amplifiers change with use, but the characteristics of mechanical devices such as loudspeakers do alter and improve their performance significantly after a short 'running in' period.

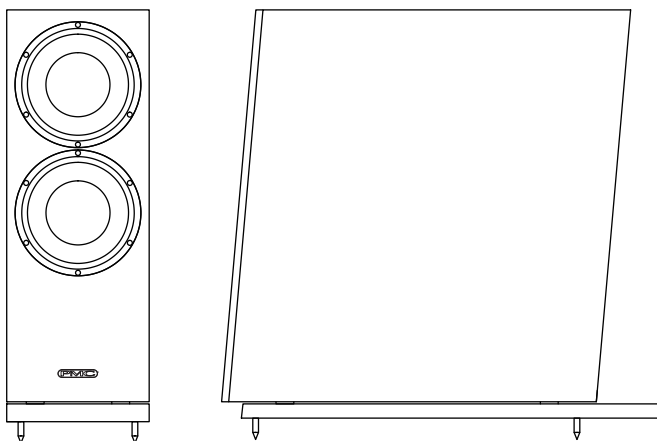
The science is simple; as the soft material surrounding the dome or woofer cone is flexed it will eventually reach a point where it has optimum compliancy allowing the drive unit to move more freely. This translates to greater accuracy, detail and speed of attack in the bass region and the mid and high frequency produces a far more vivid audio picture. This short 'running in' period takes approximately 50 hours of normal use.

50+ hours to run-in

Specifications*

Input Connectors	Two balanced analogue (left/right) via XLR (female) One AES3 digital (left/right or summed channel selectable) via XLR (female) Input sample rate: 32 -192kHz, 24-bit via internal sample rate converter All XLR-3F connectors wired Pin-1 screen, Pin-2 hot, Pin-3 cold Each input has independent ± 8 dB trim range
Outputs	Two balanced analogue (left/right) via XLR (male) One AES3 digital via XLR(male) Outputs can carry direct or high-pass filtered audio, at fixed or variable level. All outputs are simultaneously available regardless of selected source.
LCD LCD Backlight Timeout	16x2 LCD display and four navigation buttons allow system configuration 30 seconds, 2 minutes, 5 minutes, or Off
System Volume Gain Trim Analogue Input Sensitivity LFE +10dB Gain Mode	-48.5dB to +15dB -8.00dB to +7.87dB +4dB to +20dB (default = +12.5dB) Off/On
Source Selection	Analogue, AES3 Left Channel, AES3 Right Channel, AES3 Left+Right (Subwoofer signal is sum of left and right inputs)
Subwoofer LPF Roll-off Slope Subwoofer Roll-off Frequency	Low-pass filter: Off, 6dB/Oct, 12dB/Oct, or 18dB/Oct 50Hz, 80Hz, 120Hz, 150Hz, or 200Hz
Polarity Invert Phase Alignment	Off/On 0 to 180 degrees (in 5 degree increments)
Parametric EQ (PEQ) PEQ Gain	Off/On -8.00dB to +7.87dB

PEQ Frequency	20Hz to 150Hz (in 5Hz increments)
PEQ Bandwidth	Q adjustable between 1 and 8 in steps of 0.5
Left/Right Output Levels	Fixed/Variable
Left/Right Output Response	High-pass Filtered/Fullrange
Amplifier Section	400W / 4 Ohms (driving two 8 Ohm bass drivers)
Mains Power	IEC connector. 90-132 / 180-264V AC 50 / 60Hz Auto-sensing
Usable Frequency Response	22Hz to 200Hz
Effective ATL® Length	3m (9.8ft)
Drive units	Two PMC doped 170mm drivers with cast alloy chassis
Cabinet dimensions	H 577mm (+25mm spikes) W 200mm D 516mm (+10mm grille)
Weight	23kg



Service

We are confident your **twenty** subwoofer will afford many years of trouble-free listening of the highest order. But in the unlikely event that it requires repair, our unique manufacturing procedure, wherein the precise value of each component together with the response of the system as a whole is recorded, will ensure that any replaced parts will exactly match the performance of those originally included within the subwoofer.

For any issues that might arise or for advice and service requirements, the primary point of contact should be your knowledgeable and authorised PMC dealer/distributor.

If you do not have a local representative please see www.pmc-speakers.com and click on 'where to buy'.

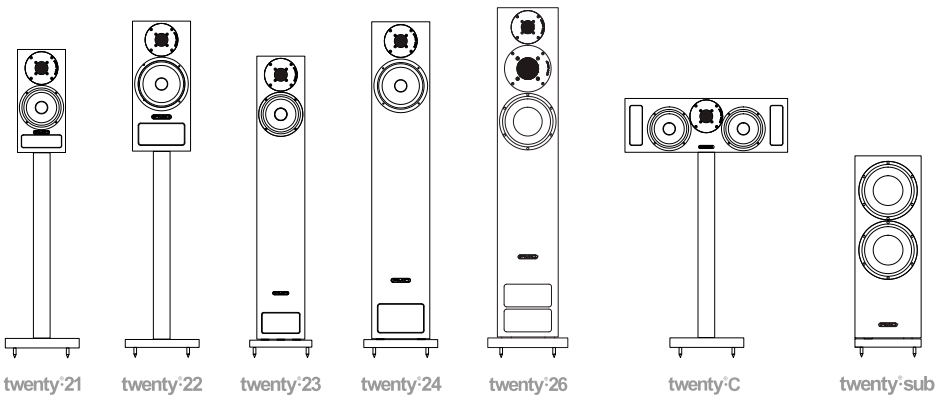
Alternatively you can view our FAQ's (Frequently Asked Questions) and servicing section on our website. (Click on the contacts section and select FAQ).



Important Note: Please do not return any products to PMC directly without first contacting our service department.

The twenty series range

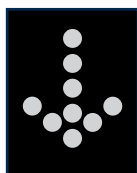
The **twenty** series currently spans 7 different models, from the 3-way floorstanding **twenty.26** down to the diminutive standmounting **twenty.21**. However, every monitor is designed with the same care and attention, using shared families of drive units and crossover designs. As a direct consequence they all enjoy the same family characteristics of wide dispersion, low distortion, consistent voicing, and an even bass response regardless of listening level. This feature allows different sizes of monitors to be used in concert to create effective multichannel systems where space is at a premium.



Our meticulous care and attention

All PMC loudspeakers are hand-built in the U.K. using components that are individually matched to our reference model. This includes the structural integrity of every cabinet, and the testing and recording of each individual component to guarantee adherence to our strict tolerances. In this way we can ensure your purchase sounds identical to the original design.

Each completed loudspeaker then undergoes a set of objective and subjective measurements. For example, frequency response sweeps ensure that the unit meets our exacting performance criteria, and critical listening tests are conducted against the reference model using a wide variety of audio material, from a benchmark BBC speech recording to carefully selected classical music, pop and rock tracks.



Warranty on-line

PLEASE ACTIVATE YOUR 5-YEAR
WARRANTY ON-LINE

GO TO WWW.PMC-SPEAKERS.COM AND CLICK ON 'REGISTER A PRODUCT'



If you do not have access to the Internet please fill in the Warranty form on pages 31 and 32, and return to PMC.

WARRANTY CERTIFICATE - PART 1

Your Copy
to KEEP

Please complete and retain this page for your own records

Product

Serial Nos

Date of purchase

Dealers name

Dealers address

Town

County

Postcode

Dealers Telephone No

Servicing and warranty issues – Please read the following carefully.

Non UK clients

Contact your local dealer/distributor for the details of warranty repairs - see www.pmc-speakers.com and click on 'where to buy' for their details.

UK clients

In the unlikely event of a fault occurring with your The Professional Monitor Company Limited (PMC) product firstly contact your dealer where the product was purchased.

Do not return a product to PMC without firstly contacting our technical dept. If the product must be returned for service you will be issued with a Returns Authorisation number.

If a product is returned to PMC and subsequently is found to have no fault or a non-warranty fault it will be subject to a minimum of £50.00 plus the carriage for its return.

Proof of purchase is required for any claim covered by this warranty.

This product is warranted for a period of 20 years from the date of purchase or upon receipt of 'our copy' overleaf or on-line registration within ten days of purchase or receipt.

The warranty covers defects due to faulty materials or workmanship but does not cover defects arising from accidental damage, misuse or wear and tear. The warranty is void if any attempt has been made by persons not authorised by PMC to dismantle, repair or modify any part of the product.

Products must be returned using original packing material. This warranty does not cover damage in transit.

Note that the cost of the carriage to PMC is not covered by the warranty.

Returned products that are defective that are covered by warranty will be repaired or replaced at the discretion of PMC.

Allow minimum of 14 working days for return of warranty repairs.

This warranty does not effect your consumer rights under statutory law. This warranty is only valid in the United Kingdom.

THE PROFESSIONAL MONITOR COMPANY LTD, HOLME COURT, BIGGLESWADE, SG18 9ST, UK T +44 (0) 870 4441044 F +44 (0) 870 4441045

WARRANTY CERTIFICATE - PART 2

Our Copy

Please complete and return this section - or simply complete the on-line registration at www.pmc-speakers.com and click on register product.

Help us improve
our products
see over



Help us Improve

Your Comments

If there is one thing we should change, what would it be?

We value all our client's comments. Please take a moment to help us improve:

Please tell us how your new PMC's perform. Your comments may appear on the customer quotes section for this product on our site. N.B. Don't worry the comments will be anonymous; your personal details will not appear.

What magazines do you read?

HiFi	Pro	Lifes style	Online
<input type="checkbox"/> HiFi Choice	<input type="checkbox"/> Future Music	<input type="checkbox"/> T3	<input type="checkbox"/> mixonline.com
<input type="checkbox"/> What HiFi	<input type="checkbox"/> Sound on Sound	<input type="checkbox"/> Stuff	<input type="checkbox"/> gearslutz.com
<input type="checkbox"/> Stereophile	<input type="checkbox"/> Audio Media	<input type="checkbox"/> GQ	<input type="checkbox"/> avreview.co.uk
<input type="checkbox"/> HiFi World	<input type="checkbox"/> Pro Sound News	<input type="checkbox"/> EVO	<input type="checkbox"/> techradar.com
<input type="checkbox"/> HiFi Critic	<input type="checkbox"/> Resolution	<input type="checkbox"/> FHM	<input type="checkbox"/> HiFi WigWam.com
<input type="checkbox"/> HiFi News	<input type="checkbox"/> Audiofanzine	<input type="checkbox"/> Shortlist	<input type="checkbox"/> What HiFi.com
<input type="checkbox"/> HiFi+	<input type="checkbox"/> IBE	<input type="checkbox"/> Maxim	<input type="checkbox"/> the-ear.net
<input type="checkbox"/> Gramophone	<input type="checkbox"/> Tape Op	<input type="checkbox"/> Esquire	<input type="text" value="Other"/>
<input type="text" value="Other"/>	<input type="text" value="Other"/>	<input type="text" value="Other"/>	

We hope you enjoy your latest purchase as much as we enjoyed designing and building them - Thank you.

Inspection certificate

Every component that appears in a PMC product is measured, tested, matched and recorded by hand. This analysis also applies to the final product we build to ensure you receive an identical replica of the reference model.

- Enclosure finish
- Assembly & Wiring
- Driver Installation
- Enclosure seal
- Level - Frequency
- Impedance - frequency
- Listening test 1
- Listening test 2
- Final inspection
- Accessory pack
- User Guide



All the above has been carefully checked by the builder of your **twenty sub** detailed on the front of this user guide.

Notes

A series of 18 horizontal dotted lines for writing notes.

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This document should not be construed as a commitment on the part of The Professional Monitor Company Limited (PMC). The information it contains is subject to change without notice. PMC assumes no responsibility for errors that may appear within this document. Information subject to change.

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CE Conformity PMC passive loudspeakers conform to CE Directive LVD 73/23/EEC and EMC 89/336/EEC.

WEEE European directive - PMC Limited is a member of a National Compliance scheme and have gained the associated certification of compliance and the following registration number from the Environment Agency WEEE/GJ0101WU

WEEE EU Directive

This symbol on the product or in/on its packaging indicates that this product must not be disposed of with other household waste. It is the responsibility of the owner to dispose of waste equipment via a designated collection point for the recycling of waste electrical and electronic equipment. The recycling of your waste equipment is an attempt to conserve natural resources and ensures that it is recycled in a manner that protects human health and the environment. For more information about where you dispose of your waste equipment for recycling, please contact your local waste/recycling authority or the dealer from whom you purchased the product.





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E sales@pmc-speakers.com

W www.pmc-speakers.com