



**BMS**

Radio Station Family

# Meter

Your way to more time and less working hours

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ISV/Software Solutions



## If you think broadcast is important BMS is your choice

**"Let's keep it simple**  
Is there a better reason for using  
a radio production system than  
time?

It is said "Time is money" but for a  
fact time is a lot more valuable  
than just money.

Without time you can not do  
anything regardless of the money.

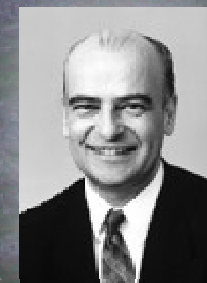
Time for You, that's our vision".

" Get On Air with the BMS  
products, Your Time.

It is your time that BMS provides  
you with and you do what you  
want with it.

That's why BMS = Your time".

*Peter "Joppe" Högfeldt,*  
Managing Director of CMS  
and the division BCC.



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*Partner*

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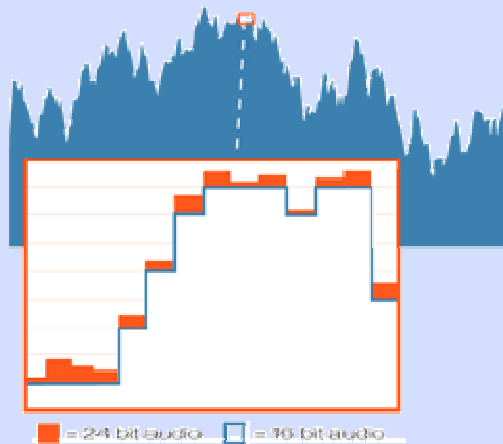


# Analog and Digital Audio



## Understanding the difference

Both the two photographs and the illustration above shows the loss of quality in between 16 and 24 bits. The photographs has the same difference in resolution as it is between 16 bit and 24 bit audio.



The loss of quality - Zoom in and it's easy to see

The illustrations shows the loss of quality in between 16 and 24 bit audio. It's easy to see how much the 16 bit audio loses in relation to the 24bit audio. The 24 bit audio keeps it original form and it's not losing any audio. This is a large improvement over today's 16 bit audio.

### 13 bits just isn't enough

Of course no professional sound technician would record a music CD with only a 13 bit resolution. But in fact in the editing process, the levels of a sound could be reduced below 13 bits. Then later in the process when the audio is increased to 16 bits, the harm has already been done.

Audio is analog, Digital audio is just digits.

In fact digital audio sounds horrible if it is not converted back to analog again. What I try to say is that digital audio is a method of describing the analog audio amplitude over time in digits.

Digits that are saved as a group/word of bits, where each bit is a digit one (1) or a digit zero (0) creating a binary word.

For example 1111000011110000 is such a word using 16 bits.

(Because 16 bits words are used on CD's it has become the most common amount of bits used.)

### Converting the audio

When the analog audio is converted into these words its done by measuring the amplitude of the audio at a specific moment by holding a ruler which has scale marks like most rulers do.

This is called to take a sample.

### One of the problems

A 16 bit word provides your ruler with a 65536 different scale marks/levels and provide a very good quality of sound but only if the whole ruler is used.

That is, you read at the top of the ruler when the amplitude is high and at the bottom of the ruler when its low and all in between.

The problem is the accuracy if the amplitudes are to low as you may not use fractions of scale marks the reading always has to be on a integer scale mark.

For example 10028 not 10028,5879 which unfortunately does not fit into a 16 bit word mathematically.

In order to be able to recreate the analog audio later on you have to take samples at a rate to which you refer to as **samplerate**. Roughly half of the samplerate will be the upper limit of the high frequencies.

### Its really the samplerate that does it

The samplerate enables us to leave the timedomain and store the digits, treat them as we want and then finally recreate the audio by entering the timedomain again.

### 24 bit audio

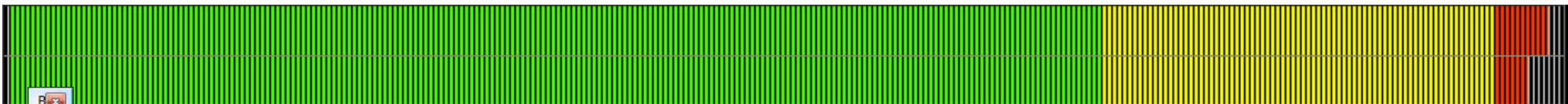
24 bit audio gives you 16,7M scale marks

24-bit audio gives you 256 times higher resolution than 16 bit. Thats a stunning 16,7 Millions different levels.

With 24 bits you're able to reduce the level of a 16 bit recorded sound to 1/256 and then increase it again without losing any audio quality at all.

Getting it right Using the BMS Audio meter your recordings and playback will be much better because you can see when its too low or too high





BMS EditSuite

00:08:26.046

Start: 08:04:30.000  
Length: 08:04:30.418  
End: 08:09:00.418

Track 1: The Very Thing That Makes You Rich (Makes Me Poor) - By Conner - BOP T.L.YOU DROP L 1

Track 2: The Very Thing That Makes You Rich (Makes Me Poor) - By Conner - BOP T.L.YOU DROP R 1

Track 3

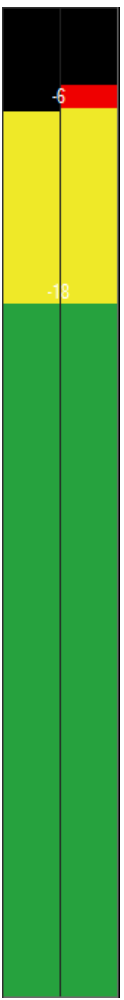
Track 4

Out

-54 -48 -42 -36 -30 -24 -18 -12 -9 -6 -3

BMS-Meter

-18 -6

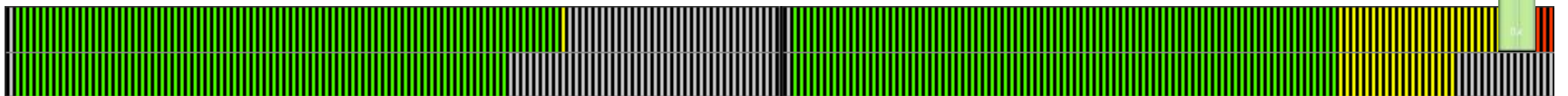
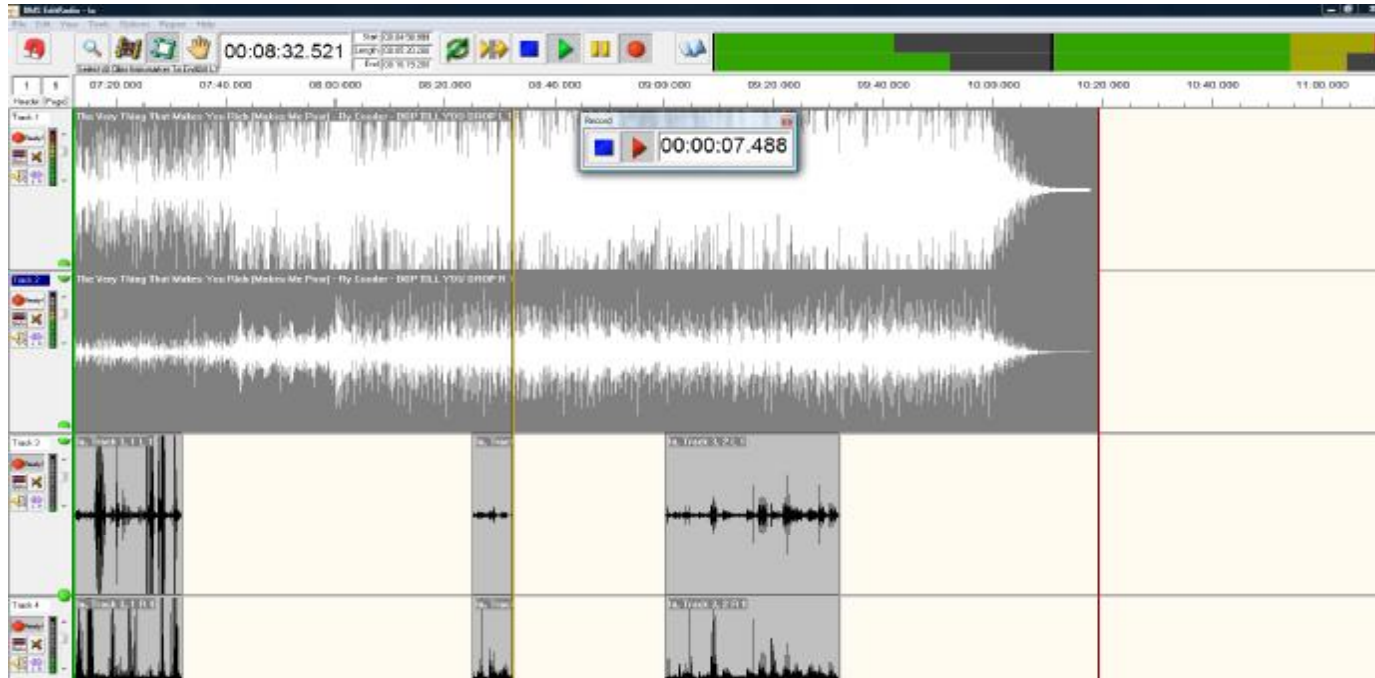
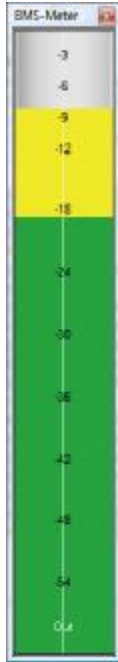
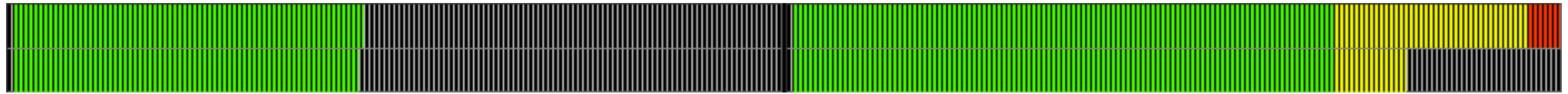


The BMS Meter in various shapes



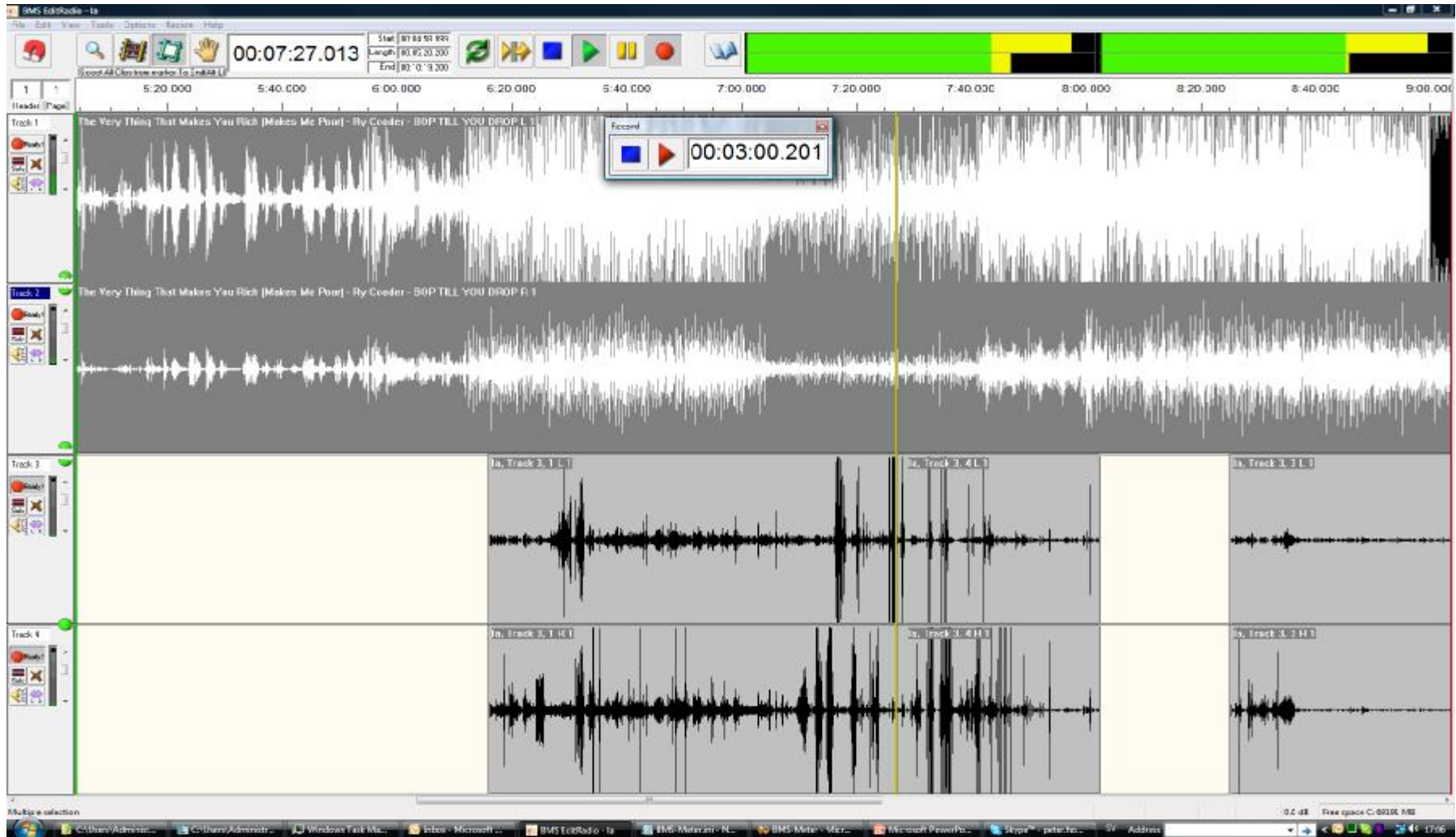
Inputmeter

Outputmeter



The BMS Meter in various shapes

# BMS EditRadio recording and playback



# BMS Controller playout metering

The screenshot displays the BMS Radio Automation Playout Controller interface, which is divided into several functional areas:

- Channel Playout (Top):** Four HD channels (A, B, C, D) are shown. Channel A is playing '04-Blow With Ry' by The Rolling Stones. Channel B is stopped. Channel C is ready to play 'New data on same track' by The Rolling Stones. Channel D is playing 'She Said Yeah' by The Rolling Stones.
- Playlist (Bottom Left):** A list of songs by The Rolling Stones, including '04-Not Fade Away', '04-Parachute Woman', '03-31 Ruby Tuesday', etc.
- Mixer Control (Center):** A 'BMS Mixer Control' window with various sliders and buttons for audio mixing.
- Playout Meter (Right):** A large circular meter showing a red segment and a digital display of '00:00:10.84'.
- File Data (Bottom Right):** Metadata for the current track, including title, artist, album, and file path.



# BMS Controller playout metering using multiple meters and soundcards

The screenshot displays the BCC BMS Radio Automation Playout Controller software interface. The main window is divided into several sections:

- Playout Meters:** Four individual meters are shown at the top, each for a different song by The Rolling Stones:
  - BMS 1 HD A:** "06-Grown Up Wrong", Artist: Rolling Stones, Tid: 00:02:00.99, Intro: 00:00. Status: **PLAYING**. Progress bar shows 01:16 / 00:44.
  - BMS 2 HD B:** "05-Doncha Bother Me", Artist: Rolling Stones, Tid: 00:02:43.60, Intro: 00:00. Status: **PLAYING**. Progress bar shows 02:02 / 00:41.
  - BMS 3 HD C:** "04-Parachute Woman", Artist: Rolling Stones, Tid: 00:02:23.72, Intro: 00:00. Status: **READY**. Progress bar shows 02:23 / 00:00.
  - BMS 4 HD D:** "She Said Yeah", Artist: Rolling Stones, Tid: 00:01:36.83, Intro: 00:00. Status: **STOPPED**. Progress bar shows 00:00 / 01:36.
- Playlist:** A list of songs is shown on the left, including "04-Not Fade Away", "04-Parachute Woman", "03-Ruby Tuesday", "04-That's How Strong My Love Is", "02-The Worst", "04-Time Is On My Side", "01-47", "04-Twenty Flight Rock", "03-43", "02-43", "03-09", "02-32", "01-57", "04-41", "02-54", "02-04", "06-17", "05-20", "09-15", "02-51", "02-29", "03-42", "02-41", "08-34", "02-28", "03-07", "03-47", "03-01", "07-25", "02-34", "03-37", "04-36", "04-10", "02-47", "01-57", "11-14", "02-09", and "02-00".
- Mixer Control:** A central panel titled "BMS Mixer Control" shows "DMK84000 Mixer Mode Select" with buttons for "Auto", "Live Assist", and "Manual". Below are several sliders for "HD A", "HD B", "PUB1", "PUB2", "PUB3", "PUB4", "PUB5", and "PUB6".
- Task Data:** A window on the right displays a large circular graphic with the text "End of Time" in the center. Below the graphic, a list of metadata fields is shown, including BMS ID, Title, Artist, Album, Producer, Upfront, ID3, BPM, Tid, Intro, Meter, EOL, Genre, Release, Ranking, Rotation, Original, Label, Skivbolag, Skivnummer, Spelat, No, Filnamn och skivning, and Playout URL.



# The configuration ini file settings

- ; 1. Current Directory where the host application is executed
- ; 2. C:\Documents and Settings\\My Documents
- ; 3. C:\Documents and Settings\\Application Data
- ; 4. C:\Documents and Settings\\All Users\Application Data
- ; 5. C:\Windows
- ; 6. C:\ (environment variable HOMEDRIVE)

These are the various paths where BMS-Meter looks a for a ini configuration file when it starts up  
Thanks to versatile paths you will be enabled to host per user settings and/or other settings

# configuration settings

- ;Metering method selects if to use BMS Virtual Driver = 1 or if you have Vista = 0
- MeteringMethod = 1

Please note that the meter requires BMS Virtual Driver with Windows XP

- ;InputMeter 1 = yes 0 = no meter
- InputMeter = 0

If you need an inputmeter set this to 1

- ;OutputMeter 1 = yes 0 = no meter
- OutputMeter = 1

If you need an outputmeter set this to 1

- ; Segments 0= no segments, or 1 or 2 = pixelsize of segmentspacer LED style bargraph
- Segment = 1

With this setting you can create a LED bargraph looking meter with various size depending on the pixelsize you set.

- ;If you selected BMS Virtual Driver as method you have to state Input device number (N cards -1)
- InputAudioDevice = 7

- ;state Outputdevice number as (N cards -1) or select -1 for device mapper if you selected BMS Virtual Driver as method
- OutputAudioDevice = -1

- ;If you selected BMS Virtual Driver as method these are Settings for the Meter
- ; Please note that the Buffer settings settings rule performance to a great extent. The smaller, the more responsive
- SampleRate = 192000
- BufferMs = 200
- Buffers = 8

# configuration settings

With this option you may turn on and off background bitmap and front bitmap, the BMS files must be named just exactly as they are but the content may be customized

;1 = yes 0 = No

- UseBackBmp = 1
- UseFrontBmp = 1

Setting the scale

- ;0 = no, 1 = yes
- ShowScale = 1

Setting the scale

- LabelPeak1 = -3
- LabelPeak2 = -6
- LabelPeak3 = -9
- LabelPeak4 = -12
- LabelPeak5 = -18
- LabelPeak6 = -24
- LabelPeak7 = -30
- LabelPeak8 = -36
- LabelPeak9 = -42
- LabelPeak10 = -48
- LabelPeak11 = -54



# configuration settings

Setting the fonts

- `FontLabels = "Verdana,Bold"`
- `FontLabelsSize = 7.0`
- `FontLabelsRatio = 1.6`

Naming texts

- `LabelIn = "In"`
- `LabelOut = "Out"`

Meter decay is a setting where you set the responsiveness for the meter.

- `;Metering Decay`
- `LevelMetersDecay = 0.01`

These are the colors of the level segments in respect to the peak levels

- `;ColorPeak0 = 0000FF`
- `;ColorPeak1 = 00FF00`
- `:ColorPeak2 = FFFF00`
- `;ColorPeak3 = FF0000`
- `ColorBack0 = 000000`

These are the levels of the level segments in respect to color

- `LevelPeak1 = -18`
- `LevelPeak2 = -3`
- `LevelPeak3 = -0`

Peak warning

- `;HeightPeak = 12`
- `;WidthPeak = 12`

# configuration settings

With setting the size and upper left corner coordinates you can create a place where the meter always place itself

- `; === Window size`
- `;Width = 10`
- `;Height = 1150`
- `Width = 600`
- `Height = 16`
  
- `;===Upper Left corner`
- `;Left = 1811`
- `;Top = 0`
- `Left = 1100`
- `Top = 1`

When the meter starts you can control if you want Sizing border and the Move and Frame caption

- `;To disable Size Move and Frame set this switch to 1`
- `NoSizeMoveFrame = 1`

When the meter starts you can control if you want it to be Always on top so i dont disappear behind other windows

- `;To place the meter Always on top set this switch to 1`
- `AlwaysOnTop = 1`



Your way to more time and less working hours

International, National, Regional & Local broadcasters. Universities, Media schools & Hi schools. And many more.  
Please do **join in, there is room** for you too.



LJUDBANG PRODUCTION  
Soundproduction for film & music



produktionsbolaget **filt**



Some of our customers claim they had to spend twice the time with other systems