

United States District Court,  
S.D. California.

**QUALCOMM INCORPORATED,**  
Plaintiff.

v.

**BROADCOM CORPORATION,**  
Defendants.

**Broadcom Corporation,**  
Counter-Claimant.

v.

**Qualcomm Incorporated,**  
Counter-Defendant.

Civil No. 05CV1958-B(BLM)

**June 20, 2006.**

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**CLAIM CONSTRUCTION ORDER FOR UNITED STATES PATENT NUMBER 5,452,104**

**RUDI M. BREWSTER, District Judge.**

Pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370(1996), on February 7-9, 2006, and March 14-16, 2006, the Court conducted a Markman hearing concerning the above-titled patent infringement action regarding construction of the disputed claim terms for U.S. Patent Number 5,452,104 ("the '104 patent"). Plaintiff Qualcomm, Inc. was represented by the law firm of Day Casebeer Madrid & Batchelder LLP, and Defendant Broadcom Corp. was represented by the law firm of Wilmer Cutler Pickering Hale and Dorr LLP.

At the Markman hearing, the Court, with the assistance of the parties, analyzed the claim terms in order to prepare jury instructions interpreting the pertinent claims at issue in the '104 patent. Additionally, the Court prepared a case glossary for terms found in the claims and specification for the '104 patent considered to be technical in nature which a jury of laypersons might not understand clearly without a specific definition.

After careful consideration of the parties' arguments and the applicable statutes and case law, the Court **HEREBY CONSTRUES** the claims in dispute for the '104 patent and **ISSUES** the relevant jury instructions as written in Exhibit A, attached hereto. Further, the Court **HEREBY DEFINES** all pertinent technical terms as written in Exhibit B, attached hereto.

**IT IS SO ORDERED.**

*EXHIBIT A FN1*

FN1. All terms appearing in bold face type and underlined have been construed by the court and appear with their definitions in the glossary in Exhibit B. The definition for each construed term appears in italics after its first use in the patent.

*UNITED STATES PATENT NUMBER 5.452.104-CLAIM CHART*

<b>VERBATIM CLAIM LANGUAGE</b>	<b>COURT'S CONSTRUCTION</b>
<b>Claim 3</b>	<b>Claim 3</b>
<p>3. In an adaptive block size compression system wherein a block of pixel data is transformed to AC and DC discrete cosine transform (DCT) coefficient data for a block and constituent sub-blocks of pixel data, and wherein the AC and DC DCT coefficient values of a composite block of selected ones of said block and constituent sub-blocks of pixel data are provided for transmission, an apparatus for compressing said DC DCT coefficient values comprising:</p>	<p>3. In an <b><i>adaptive block size compression system</i></b> [ <i>an apparatus capable of use in compressing data organized in different block sizes</i> ] wherein a <b><i>block of pixel data</i></b> [ <i>a set of values specifying the brightness and/or color of pixels in a rectangular array of pixels. A <b>pixel</b> is a contraction of "picture element," the smallest addressable element in an electronic display .]</i> is transformed to <b><i>AC and DC discrete cosine transform (DCT)</i></b> [ <i>DCT is a mathematical transform that converts data into a set of coefficients that are derived from equations (1), (2) and (3) set forth in the '104 patent in col. 4, line 60 to col. 5, line 4. DC DCT coefficient is the weighted average of the data input into the DCT. The AC DCT coefficient is any DCT coefficient other than a DC DCT coefficient.</i>] coefficient data for a block and <b><i>constituent sub-blocks</i></b> [ <i>constituent sub-block is a part of a block resulting from a partitioning of the block into multiple contiguous, adjacent, nonoverlapping parts</i> ] of <b><i>pixel data</i></b> [ <i>values specifying the brightness and/or color of one or more pixels</i> ], and wherein the <b><i>AC and DC DCT coefficient</i></b> values of a composite block of selected ones of said block and constituent sub-blocks of <b><i>pixel data</i></b> are provided for transmission, an apparatus for compressing said <b><i>DC DCT coefficient</i></b> values <b><i>comprising</i></b> [ <i>including but not limited to</i> ]:</p>
<p>discrete quadtree means for receiving at least one block of data representing said block of pixel data, performing a plurality</p>	<p><b><i>discrete quadtree means</i></b> [ <i>This is a means-plus-function limitation as discussed below</i> ] for receiving at least one block of data representing said <b><i>block of pixel data</i></b>, performing a <b><i>plurality</i></b> [ <i>two or more</i> ] of <b><i>DCT</i></b> operations to provide <b><i>AC and DC DQT coefficient</i></b> [ <i>A DC DQT</i></p>

of DCT operations to provide AC and DC DQT coefficient values, with a first DCT operation performed on said at least one block of data to provide first sub-blocks of AC and DC DQT coefficient values, performing at least one additional DCT operation wherein each of said at least one additional DCT operation is performed on resultant DC DQT coefficient data of a preceding DCT operation, and selecting ones of AC and DC DQT coefficient values to provide a DQT composite block of AC and DC coefficient values; and

*coefficient* is the coefficient output from a DCT operation in the DQT that is a weighted average of the data input into that DCT operation. An **AC DQT coefficient** is any coefficient output from a DCT operation in the DQT other than the DC DQT coefficient.] values, with a first DCT operation performed on said at least one block of data to provide first sub-blocks of **AC and DC DQT coefficient** values, performing at least one additional DCT operation wherein each of said at least one additional DCT operation is performed on resultant **DC DQT coefficient** data of a preceding DCT operation, and selecting ones of **AC and DC DQT coefficient** values to provide a **DQT composite block of AC and DC coefficient values** [ a series of AC and DC coefficient values determined from successive stages of the DQT ]; and

" *Discrete quadtree means for receiving at least one block of data representing said block of pixel data, performing a plurality of DCT operations to provide AC and DC DQT coefficient values, with a first DCT operation performed on said at least one block of data to provide first sub-blocks of AC and DC DQT coefficient values, performing at least one additional DCT operation wherein each of said at least one additional DCT operation is performed on resultant DC DQT coefficient data of a preceding DCT operation, and selecting ones of AC and DC DQT coefficient values to provide a DOT composite block of AC and DC coefficient values* " is a means-plus function limitation. [ This means-plus-function limitation has four functions. The first function of this limitation is: (1) receiving at least one block of data representing said **block of pixel data**. The corresponding structure that performs the first function is an input into the DQT subsystem or an input into the DCT element of a DQT subsystem.

The second and third functions of this limitation are: (2) performing a plurality of **DCT** operations to provide AC and DC **DQT** [discrete quadtree transform: a sequence of two or more two-dimensional discrete cosine transforms that operate on a quadtree structure of a block of pixel data and/or coefficient data derived from a block of pixel data. A **quadtree** is a division of a block into one or more levels of four sub-blocks ("nodes"), such that each could be, but is not required to be, further sub-divided into four further nodes] coefficient values, with a first **DCT** operation performed on said at least one block of data to provide first sub-blocks of **AC and DC DQT coefficient** values and (3) performing at least one additional **DCT** operation wherein each of said

at least one additional **DCT** operation is performed on resultant **DC DQT coefficient** data of a preceding **DCT** operation.

The corresponding structure for the second and third functions is one or more of the **DCT** elements of Figure 6 (**DCT** elements 70, 74, 78, and/or 84) not limited to operation on 2x2 sized sub-blocks; Col. 4:38-52 (**DCT** Formula); Col. 9:67-10:1 ("**DCT** elements 10a-10d may be constructed in integrated circuit form as is well known in the art"); Col 17:16-58 and Figure 1 and Figure 6 (the same block of pixel data is received in the **DQT** subsystem); Col. 8:46-58 ("various block sizes may be used," including  $N \times N$ ,  $N \times M$ , and odd integer-sized blocks such as  $9 \times 9$ ); Col. 9:48-52 ( $N \times N$  pixel data is input to the **DQT** subsystem and  $N = 16$  for purposes of illustration); Figure 1 (16 x 16 **PIXEL BLOCK FROM FRAME BUFFER**, and arrow "TO **DQT SUBSYSTEM**"); and Figure 6 (16 x 16 **PIXEL BLOCK**).

The fourth function of this limitation is: (4) selecting ones of **AC and DC DQT coefficient** values to provide a **DQT** composite block of **AC and DC coefficient** values.

The corresponding structure for the fourth function is a multiplexer.]

encoding means for receiving said **DQT** composite block, selecting values from said **DQT** composite block and encoding said selected values of said **DQT** composite block to provide a signal indicative of compressed **DC DCT** coefficient values.

**encoding means for receiving said DQT composite block, selecting values from said DQT composite block and encoding said selected values of said DQT composite block to provide a signal indicative of compressed DC DCT coefficient values [This is a means plus function limitation. This means-plus-function limitation has three functions. The first function of this limitation is receiving said DQT composite block. The corresponding structure for the first function is an input into a selector or a multiplexer.**

The second function is selecting values from said **DQT** composite block. The corresponding structure for the second function is a selector or a multiplexer.

The third function is encoding said selected values of said **DQT** composite block to provide a signal indicative of compressed **DC DCT coefficient** values.

The corresponding structure for the third function is a code lookup table or a code length lookup table.].

**Claim 4**

4. The apparatus of claim 3 wherein said discrete quadtree means comprises:

at least one **DCT** means for receiving said at least one block of data and performing a series of **DCT** operations to provide **AC and DC DQT** coefficient values with a first

**Claim 4**

The apparatus of claim 3 wherein said **discrete quadtree means comprises:**

at least one **DCT** means for receiving said at least one block of data and performing a series of **DCT** operations to provide **AC and DC DQT** coefficient values with a first **DCT** operation performed on said at least one block of data and with additional **DCT** operations performed on sub-blocks of selected **DC DQT** coefficient values [This is a means plus function limitation. This means-plus-function limitation has two functions.

DCT operation performed on said at least one block of data and with additional DCT operations performed on sub-blocks of selected DC DQT coefficient values; and

*The first function of this limitation is receiving said at least one block of data.*

*The corresponding structure for the first function is an input into the DQT subsystem or an input into the DCT element of a DQT subsystem.*

*The second function of this limitation is performing a series of DCT operations to provide AC and DC DQT coefficient values with a first DCT operation performed on said at least one block of data and with additional DCT operations performed on sub-blocks of selected DC DQT coefficient values.*

*The corresponding structure for the second function is one or more of the DCT elements of Figure 6 (DCT elements 70, 74, 78, and/or 84) not limited to operation on 2 x 2 sized sub-blocks; Col. 4:38-52 (DCT Formula); Col. 9:67-10:1 ("DCT elements 10a-10d may be constructed in integrated circuit form as is well known in the art"); Col 17:16-58 and Figure 1 and Figure 6 (the same block of pixel data is received in the DOT subsystem; Col. 8:46-58 ("various block sizes may be used," including N x N, N x M, and odd integer-sized blocks such as 9 x 9); Col. 9:48-52 (N x N pixel data is input to the DQT subsystem and N=16 for purposes of illustration); Figure 1 (16 x 16 PIXEL BLOCK FROM FRAME BUFFER, and arrow "TO DQT SUBSYSTEM"); and Figure 6 (16 x 16 PIXEL BLOCK).]; and*

selector means for receiving said AC and DC DQT coefficient values selecting ones of said AC and DC DQT, coefficient values to provide said sub-blocks of selected DC DQT coefficient values in accordance with a predetermined selection format.

*selector means for receiving said AC and DC DQT coefficient values selecting ones of said AC and DC DQT, coefficient values to provide said sub-blocks of selected DC DOT coefficient values in accordance with a predetermined selection format [This is a means plus function limitation. This means-plus function limitation has two functions. The first function of this limitation is receiving said AC and DC DQT coefficient values.*

*The corresponding structure of the first function is an input into a selector or a multiplexer.*

*The second function of this limitation is selecting ones of said AC and DC DQT coefficient values to provide said subblocks of selected DC DQT*

*coefficient* values in accordance with a predetermined selection format.

*The corresponding structure of the second function is a selector or a multiplexer.].*

<b>Claim 5</b>	<b>Claim 5</b>
5. The apparatus of claim 4 wherein said at least one DCT means comprises a plurality of single DCT means wherein each of said single DCT means is for performing a corresponding one of said series of DCT operations.	5. The apparatus of claim 4 wherein said at least one <b><i>DCT means comprises a plurality</i></b> of single <b><i>DCT means</i></b> wherein each of said single <b><i>DCT means</i></b> is for performing a corresponding one of said series of <b><i>DCT</i></b> operations.
<b>Claim 7</b>	<b>Claim 7</b>
7. The apparatus of claim 3 wherein said at least one block of data comprises pixel data.	7. The apparatus of claim 3 wherein said at least one block of data <b><i>comprises pixel data.</i></b>
<b>Claim 13</b>	<b>Claim 13</b>
13. In an adaptive block size compression system wherein a block of pixel data is transformed to AC and DC discrete cosine transform (DCT) coefficient data for a block and at least one constituent level of sub-blocks of pixel data, and wherein the AC and DC DCT coefficient values of a composite block of selected ones of said block and constituent sub-blocks of pixel data are provided for transmission, a method for compressing said DC DCT coefficient values comprising:	13. In an <b><i>adaptive block size compression system</i></b> wherein a <b><i>block of pixel data</i></b> is transformed to <b><i>AC and DC discrete cosine transform (DCT)</i></b> coefficient data for a block and at least one constituent level of sub-blocks of pixel data, and wherein the <b><i>AC and DC DCT coefficient</i></b> values of a composite block of selected ones of said block and <b><i>constituent sub-blocks</i></b> of pixel data are provided for transmission, a method for compressing said <b><i>DC DCT coefficient</i></b> values comprising:
receiving at least one block of data;	receiving at least one block of data;
performing a series of discrete cosine transformation (DCT) operations to provide AC and DC DQT coefficient values with a first DCT operation performed on said at least one block of data to provide first sub-blocks of AC and DC DOT coefficient values and at least one additional DCT operations is performed on sub-blocks of selected DC DQT coefficient values resultant from a preceding DCT operation of said series of DCT operations; and	performing a series of discrete cosine transformation ( <b><i>DCT</i></b> ) operations to provide <b><i>AC and DC DQT coefficient</i></b> values with a first <b><i>DCT</i></b> operation performed on said at least one block of data to provide first sub-blocks of <b><i>AC and DC DQT coefficient</i></b> values and at least one additional <b><i>DCT</i></b> operations is performed on sub-blocks of selected <b><i>DC DQT coefficient</i></b> values resultant from a preceding <b><i>DCT</i></b> operation of said series of <b><i>DCT</i></b> operations; and
selecting ones of AC and DC DQT coefficient values resultant from said first DCT operation and said at least one additional DCT operation to provide a DQT composite block of AC and DC DQT coefficient values.	selecting ones of <b><i>AC and DC DQT coefficient</i></b> values resultant from said first <b><i>DCT</i></b> operation and said at least one additional <b><i>DCT</i></b> operation to provide a <b><i>DQT composite block of AC and DC DQT coefficient values.</i></b>
<b>Claim 59</b>	<b>Claim 59</b>
59. In an image decoder wherein an image block of pixel data is processed by performing a discrete cosine transform (DCT) operation on said block of pixel data and on at least one predetermined level of constituent sub-blocks of pixel data thereof, and providing corresponding block and sub-blocks of	59. In an image decoder wherein an image <b><i>block of pixel data</i></b> is processed by performing a discrete cosine transform ( <b><i>DCT</i></b> ) operation on said <b><i>block of pixel data</i></b> and on at least one predetermined level of <b><i>constituent sub-blocks</i></b> of pixel data thereof, and providing corresponding block and sub-blocks of <b><i>AC and DC DCT</i></b>

AC and DC DCT coefficient values and wherein said DC DCT coefficient values is further processed by performing a series of at least one additional DCT operation on said sub-blocks of DC DCT coefficient values, a subsystem for decoding said processed DC DCT coefficient values comprising:	<i>coefficient</i> values and wherein said <b>DC DCT coefficient</b> values is further processed by performing <b>a series of at least one additional DCT operation</b> [ <i>one or more DCT operations</i> ] on said sub-blocks of <b>DC DCT coefficient</b> values, a subsystem for decoding said processed <b>DC DCT coefficient</b> values <b>comprising</b> :
decoder means having an input for receiving a signal indicative of said processed DC DCT coefficient values and having an output; and	<b>decoder means</b> [ <i>an element capable of translating coded data to unencoded data</i> ] having an input for receiving a signal indicative of said processed <b>DC DCT coefficient</b> values and having an output; and
inverse discrete quadtree means having an input coupled to said decoder means output, wherein said inverse discrete quadtree means comprises:	<b>inverse discrete quadtree means</b> [ <i>an element capable of determining the inverse of a discrete quadtree transform, by using a sequence of two or more inverse discrete cosine transform operations to convert a block of DQT coefficients into a block of pixel data</i> ] having an input coupled to said <b>decoder means</b> output, wherein said <b>inverse discrete quadtree means comprises</b> :
plurality of separator means with a first separator means having an input for receiving said signal indicative of said processed DC DCT coefficient values and additional separator means having an input and an output;	<b>plurality of separator means</b> [ <i>an element capable of selecting and extracting coefficients from a stage of an inverse DQT computation</i> ] with a first <b>separator means</b> having an input for receiving said signal indicative of said processed DC DCT coefficient values and additional <b>separator means</b> having an input and an output;
at least one inverse discrete means disposed between said plurality of separator means having an input coupled to a corresponding separator means output.	at least one <b>inverse discrete means</b> [ <i>an element capable of performing an inverse discrete cosine transform</i> ] disposed between said <b>plurality of separator means</b> having an input coupled to a corresponding <b>separator means</b> output.

<b>Claim 60</b>	<b>Claim 60</b>
60. The apparatus of claim 59 wherein said separator means further having a second output and wherein said discrete quadtree means further comprises:	60. The apparatus of claim 59 wherein said <b>separator means</b> further having a second output and wherein said <b>discrete quadtree means</b> further <b>comprises</b> :

at least one multiplexer means having an input for receiving a timing signal, a second input coupled to a corresponding inverse cosine transform means output and a third input coupled to a corresponding second separator means output.	at least one <b>multiplexer means</b> [ <i>an element capable of selecting one of a number of input signals and routing that input signal's information to the multiplexer's output</i> ] having an input for receiving a <b>timing signal</b> [ <i>a signal capable of conveying timing information</i> ], a second input coupled to a corresponding <b>inverse cosine transform means</b> [ <i>an element capable of performing an inverse discrete cosine transform</i> ] output and a third input coupled to a corresponding second <b>separator means</b> output.
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**EXHIBIT B**

<b>TERM</b>	<b>DEFINITION</b>
<b>AC and DC discrete cosine transform (DCT)</b>	DCT is a mathematical transform that converts data into a set of coefficients that are derived from equations (1), (2) and (3) set forth in the '104 patent in col. 4, line 60 to col. 5, line 4. <i>DC DCT coefficient</i> is the weighted average of the data input into the DCT. The <i>AC DCT coefficient</i> is any DCT coefficient other than a DC DCT coefficient.
<b>AC DCT coefficient</b>	any DCT coefficient other than a DC DCT coefficient
<b>AC and DC DQT coefficient</b>	A <i>DC DOT coefficient</i> is the coefficient output from a DCT operation in the DQT that is a weighted average of the data input into that DCT operation. An <i>AC DQT coefficient</i> is any coefficient output from a DCT operation in the DQT other than the DC DQT coefficient.
<b>AC DQT coefficient</b>	any coefficient output from a DCT operation in the DQT other than the DC DQT coefficient
<b>adaptive block size compression system</b>	an apparatus capable of use in compressing data organized in different block sizes
<b>a series of at least one additional DCT operation</b>	one or more DCT operations
<b>block of pixel data</b>	a set of values specifying the brightness and/or color of pixels in a rectangular array of pixels [ <i>A pixel is a contraction of "picture element," the smallest addressable element in an electronic display.</i> ]
<b>comprises</b>	See definition of " <b>comprising.</b> "
<b>comprising</b>	including but not limited to
<b>constituent sub-blocks</b>	constituent sub-block is a part of a block resulting from a partitioning of the block into multiple contiguous, adjacent, non-overlapping parts
<b>DC DCT coefficient</b>	the weighted average of the data input into the DCT.
<b>DC DQT coefficient</b>	the coefficient output from a DCT operation in the DQT that is a weighted average of the data input into that DCT operation
<b>DCT</b>	discrete cosine transform. DCT is a mathematical transform that converts data into a set of coefficients that are derived from equations (1), (2) and (3) set forth in the '104 patent in col. 4, line 60 to col. 5, line 4.

**DCT means for receiving said at least one block of data and performing a series of DCT operations to provide AC and DC DQT coefficient values with a first DCT operation performed on said at least one block of data and with additional DCT operations performed on sub-blocks of selected DC DQT coefficient values**

**This is a means plus function limitation.** This means-plus-function limitation has two functions.

The first function of this limitation is receiving said at least one block of data. The corresponding structure for the first



function is an input into the DQT subsystem or an input into the DCT element of a DQT subsystem.

The second function of this limitation is performing a series of *DCT* operations to provide *AC and DC DQT coefficient* values with a first *DCT* operation performed on said at least one block of data and with additional *DCT* operations performed on sub-blocks of selected *DC DQT coefficient* values.

	<p>The corresponding structure for the second function is one or more of the DCT elements of Figure 6 (DCT elements 70, 74, 78, and/or 84) not limited to operation on 2 x 2 sized sub-blocks; col. 4:38-52 (DCT Formula); col. 9:67-10:1 ("DCT elements 10a-10d may be constructed in integrated circuit form as is well known in the art"); col. 17:16-58 and Figure 1 and Figure 6 (the same block of pixel data is received in the DQT subsystem; col. 8:46-58 ("various block sizes may be used," including N x N, N x M, and odd integer-sized blocks such as 9 x 9); col. 9:48-52 (N x N pixel data is input to the DQT subsystem and N=16 for purposes of illustration); Figure 1 (16 x 16 PIXEL BLOCK FROM FRAME BUFFER, and arrow "TO DQT SUBSYSTEM"); and Figure 6 (16 x 16 PIXEL BLOCK).]</p>
<p><b>DCT means</b></p>	<p>See definition of "<b>DCT means for receiving said at least one block of data and performing a series of DCT operations to provide AC and DC DQT coefficient values with a first DCT operation performed on said at least one block of data and with additional DCT operations performed on sub-blocks of selected DC DQT coefficient values.</b>"</p>
<p><b>decoder means</b></p>	<p>an element capable of translating coded data to unencoded data</p>

**discrete quadtree means for receiving at least one block of data representing said block of pixel data, performing a plurality of DCT operations to provide AC and DC DQT coefficient values, with a first DCT operation performed on said at least one block of data to provide first sub-blocks of AC and DC DQT coefficient values, performing at least one additional DCT operation wherein each of said at least one additional DCT operation is performed on resultant DC DQT coefficient data of a preceding DCT operation, and selecting ones of AC and DC DQT coefficient**

This is a means-plus-function limitation. This means-plus-function limitation has four functions. The first function of this limitation is: (1) receiving at least one block of data representing said *block of pixel data*.

**values to provide a DQT composite block of AC and DC coefficient values**

The corresponding structure that performs the first function is an input into the DQT subsystem or an input into the DCT element of a DQT subsystem.

The second and third functions of this limitation are: (2) performing a plurality of *DCT* operations to provide AC and DC *DQT* [discrete quadtree transform: a sequence of two or more two-dimensional discrete cosine transforms that operate on a quadtree structure of a block of pixel data and/or coefficient data derived from a block of pixel data. A *quadtree* is a division of a block into one or more levels of four sub-blocks ("nodes"), such that each could be, but is not required to be, further sub-divided into four further nodes] coefficient values, with a first *DCT* operation performed on said at least one block of data to provide first sub-blocks of *AC and DC DQT coefficient* values and (3) performing at least one additional *DCT* operation wherein each of said at least one additional *DCT* operation is performed on resultant *DC DQT coefficient* data of a preceding *DCT* operation.

The corresponding structure for the second and third functions is one or more of the DCT elements of Figure 6 (DCT elements 70, 74, 78, and/or 84) not limited to operation on 2 x 2 sized sub-blocks; Col. 4:38-52 (DCT Formula); Col. 9:67-10:1 ("DCT elements 10a-10d may be constructed in integrated circuit form as is well known in the art"); Col. 17:16-58 and Figure 1 and Figure 6 (the same block of pixel data is received in the DQT subsystem); Col. 8:46-58 ("various block sizes may be used," including N x N, N x M, and odd integer-sized blocks such as 9 x 9); Col. 9:48-52 (N aN pixel data is input to the DQT subsystem and N=16 for purposes of illustration); Figure 1 (16x16 PIXEL BLOCK FROM FRAME BUFFER, and arrow "TO DQT SUBSYSTEM"); and Figure 6 (16 x 16 PIXEL BLOCK).

*The fourth function of this limitation is: (4) selecting ones of % AC and DC DQT coefficient values to provide a DQT composite block of AC and DC coefficient values.*

	<i>The corresponding structure for the fourth function is a multiplexer.</i>
<b>discrete quadtree means</b>	<b>See definition of "Discrete quadtree means for receiving at least one block of data representing said block of pixel data, performing a plurality of DCT operations to</b>

	provide AC and DC DQT coefficient values, with a first DCT operation performed on said at least one block of data to provide first sub-blocks of AC and DC DQT coefficient values, performing at least one additional DCT operation wherein each of said at least one additional DCT operation is performed on resultant DC DQT coefficient data of a preceding DCT operation, and selecting ones of AC and DC DQT coefficient values to provide a DQT composite block of AC and DC coefficient values."
<b>DQT</b>	(discrete quadtree transform): a sequence of two or more two-dimensional discrete cosine transforms that operate on a quadtree structure of a block of pixel data and/or coefficient data derived from a block of pixel data. A <i>quadtree</i> is a division of a block into one or more levels of four sub-blocks ("nodes"), such that each could be, but is not required to be, further sub-divided into four further nodes.
<b>DQT composite block of AC and DC coefficient values</b>	a series of AC and DC coefficient values determined from successive stages of the DQT
<b>encoding means for receiving said DQT composite block, selecting values from said DQT composite block and encoding said selected values of said DQT composite block to provide a signal indicative of compressed DC DCT coefficient values</b>	<p><b>This is a means plus function limitation.</b> This means-plus-function limitation has three functions.</p> <p>The first function of this limitation is receiving said <i>DOT</i> composite block. The corresponding structure for the first function is an input into a selector or a multiplexer.</p> <p>The second function is selecting values from said <i>DQT</i> composite block. The corresponding structure for the second function is a selector or a multiplexer.</p> <p>The third function is encoding said selected values of said <i>DOT</i> composite block to provide a signal indicative of compressed <i>DC DCT coefficient</i> values. The corresponding structure for the third function is a code lookup table or a code length lookup table.</p>
<b>inverse cosine transform means</b>	an element capable of performing an inverse discrete cosine transform
<b>inverse discrete means</b>	an element capable of performing an inverse discrete cosine transform
<b>inverse discrete quadtree means</b>	an element capable of determining the inverse of a discrete quadtree transform, by using a sequence of two or more

	inverse discrete cosine transform operations to convert a block of DQT coefficients into a block of pixel data
<b>multiplexer means</b>	an element capable of selecting one of a number of input signals and routing that input signal's information to the multiplexer's output
<b>pixel</b>	a contraction of "picture element," the smallest addressable element in an electronic display
<b>pixel data</b>	values specifying the brightness and/or color of one or more pixels
<b>plurality</b>	two or more
<b>quadtree</b>	a division of a block into one or more levels of four sub-blocks ("nodes"), such that each could be, but is not required to be, further sub-divided into four further nodes

**selector means for receiving said AC and DC DQT coefficient values selecting ones of said AC and DC DQT, coefficient values to provide said sub-blocks of selected DC DQT coefficient values in accordance with a predetermined selection format**

**This is a means plus function limitation.** This means-plus-function limitation has two functions.

The first function of this limitation is receiving said *AC and DC DOT coefficient* values.

The corresponding structure or the first function is an input into a selector or a multiplexer.

The second function of this limitation is selecting ones of said *AC and DC DQT coefficient* values to provide said sub-blocks of selected *DC DQT coefficient* values in accordance with a predetermined selection format.

	The corresponding structure of the second function is a selector or a multiplexer.
<b>separator means</b>	an element capable of selecting and extracting coefficients from a stage of an inverse DQT computation
<b>timing signal</b>	a signal capable of conveying timing information

S.D.Cal.,2006.

Qualcomm Inc. v. Broadcom Corp.

Produced by Sans Paper, LLC.