GEF (Cell Bin)

cellBin Group

blockIndex Dataset

1D array

(uint32)	Cell count in each partition block. cnt= blockIndex[i+1]-blockIndex[i]

blockSize Dataset

1D array

4*(uint32)	4-element array. The 4 items represent the block length in x-axis, block length in y-axis, block count in x-axis, and block count in y-axis, respectively.

cell Dataset

attribute

averageArea	Average area for cells in pixel
averageDnbCount	Average number of mRNA-captured DNBs in a cell
averageExpCount	Average MID count in cell
averageGeneCount	Average gene count in cell
maxArea	Maximum area for cells in pixel
maxDnbCount	Maximum number of mRNA-captured DNBs in a cell
maxExpCount	Maximum MID count in cell
maxGeneCount	Maximum gene count in cell
maxX	Maximum x coordinate of the cell's center of mass
maxY	Maximum y coordinate of the cell's center of mass
medianArea	Median area for cells in pixel
medianDnbCount	Median number of mRNA-captured DNBs in a cell
medianExpCount	Median MID count in cell
medianGeneCount	Median gene count in cell
minArea	Minimum area for cells in pixel
minDnbCount	Minimum number of mRNA-captured DNBs in a cell
minExpCount	Minimum MID count in cell
minGeneCount	Minimum gene count in cell
minX	Minimum x coordinate of the cell's center of mass
minY	Minimum y coordinate of the cell's center of mass

compound

id	Cell ID index, the start ID is 0
x	The x coordinate of the cell's center of mass
y	The y coordinate of the cell's center of mass
offset	The start row index of the cell in the "/cellBin/ cellExp" dataset
geneCount	Gene count in the cell
expCount	Cell MID count
dnbCount	mRNA-captured DNBs of the cell
area	Cell area in pixel
cellTypeID	Cell type ID
clusterID	Cell cluster ID

cellBorder Dataset

attribute

maxX	Maximum x coordinate of the bounding box of the cell
maxY	Maximum y coordinate of the bounding box of the cell
minX	Minimum x coordinate of the bounding box of the cell
minY	Minimum y coordinate of the bounding box of the cell

3D array (cell*32*2)

32*(int16,int16)	A list of 32 coordinates recording the differences between cell bounding points and the cell's center of mass (0,0). The real coordinate of cell's center of mass (x, y) can be obtained from "cell" dataset using cellID

cellExon Dataset Optional

attribute

maxExon	Maximum exon count of a gene in all cells
minExon	Minimum exon count of a gene in all cells

1D array

(uint16)	Exon count in a cell, the index of the array is same to the cellID in the "cell" dataset

cellExp Dataset

attribute

maxCount	Maximum MID count of a gene in a cell

compound

geneID	Gene IDs of the genes detected in the cell. ID is the index of "gene" dataset
count	MID count for the gene

cellExpExon Dataset Optional

attribute

maxExon	Maximum exon count of a gene in a cell

1D array

(uint16)	Exon count (MID) for the gene. The index is same to the "cellExp" dataset

share index

cellTypeList Dataset

1D array

(S32)	Cell type, "default" stands for undefined cell type

gene Dataset

attribute

maxCellCount	Maximum number of cells a gene can be detected
maxExpCount	Maximum MID count of a gene
minCellCount	Minimum number of cells a gene can be detected
minExpCount	Minimum MID count of a gene

compound

geneName	Gene name
offset	The start row index of the gene in "/cellBin/ geneExp" dataset
cellcount	Number of cells a gene can be detected
expCount	Sum of MID count for the gene
maxMIDcount	Maximum MID count of a gene in a cell

geneExon Dataset Optional

attribute

maxExon	Maximum exon count of a gene
minExon	Minimum exon count of a gene

1D array

(uint32)	Total exon count of a gene, the index of "geneExon" dataset is same to the "gene" dataset

geneExp Dataset

attribute

maxCount	Maximum MID count of a gene

compound

cellID	cellID that contains the gene whose index is same to the index in "gene" dataset
count	The MID count of the gene, whose index is same to the index in "gene" dataset, in the cellID

geneExpExon Dataset Optional

attribute

maxExon	Maximum exon expression of a gene in a cell

1D array

(uint16)	Exon count of a gene in a cell. The index of "geneExpExon" dataset is same to the "geneExp" dataset

codedCellBlock Group Optional

attribute

info	Metadata of encoded precomputed data in JSON

Bytes dataset

0_0 Dataset	Bytecode of the chunk
...	
n_m Dataset	Bytecode of the chunk

attribute

geftool_ver	geftool version
offsetX	Minimum x coordinate in bin 1
offsetY	Minimum y coordinate in bin 1
omics	Omics name
resolution	Physical pitch (nm) between neighbor spots
version	GEF format
bin_type	Bin type

Presented with xmind