Transmission Tower HDA

Asset Overview

Asset Name	Transmission Tower
Category	Procedural Asset HDA
Unreal Version Tested	5.6
Version	Houdini Commercial 20.5.684
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What This Asset Is For

This asset gives the 3D artist the ability to create different variations of a lattice steel transmission tower line procedurally. Towers are distributed along an input curve, and the connecting cables are generated automatically, so an entire power line can be laid out and adjusted through exposed parameters controlling the tower's proportions, cross arms, and cables.

What This Asset Is NOT For

This asset is made for creating only one type of lattice steel transmission tower with different variations, and not all the types of transmission towers that exist in life. It does not generate monopole, tubular, or guyed tower types, and it does not produce insulators, fittings, or other small hardware details.

Inputs & Outputs

Index	Type	Description
0	Geometry (Curve)	Input curve defining the path the towers and cables follow. Towers are distributed along this curve according to Tower Count.

Parameters

Parameter	Type	Description	Notes
Tower Material	String	Material assigned to the tower geometry.	Materials path
Cables Material	String	Material assigned to the cable geometry.	Materials path
Tower Count	Integer	Number of towers generated along the input curve.	T_count
Tower Size	Float (2)	Base footprint of the tower on X and Z.	T_size
Tower Height	Integer	Overall, the height of the tower.	T_hieght
Tower Gradual Size	Float (2)	Rate at which the tower tapers from base to top on X and Z. Lower values give a steeper taper.	T_gradual_size
Tower Top Size	Float	Width of the flat-top section of the tower.	T_top_plane
Cross Arm Count	Integer	Number of cross arms generated on each tower.	CA_count
Cross Arm Width	Float	How far the cross arms extend horizontally from the tower body.	CA_width
Cross Lines Spacing	Float	Spacing of the crossed lattice bracing between the structural members.	x_lines_space
Cables Height	Float	Vertical offset of the cables relative to their attachment points, controlling the amount of sag.	cables_height

Parameter	Type	Description	Notes
Cables Curve Segments	Integer	Number of segments along each cable curve, controlling how smooth the sag curve reads.	cables_curve
Cables Mesh Divisions	Integer	Number of radial divisions used when sweeping the cable into a tube.	cables_division
Cables Radius	Float	Thickness of the cables.	cables_radius

Performance Notes

Cost scales primarily with Tower Count, since the full tower structure is rebuilt for every tower along the curve. Cable cost scales with Cables Curve Segments multiplied by Cables Mesh Divisions across every cable span.

For layout and blocking, keep Cables Curve Segments and Cables Mesh Divisions low and raise them only for hero towers or close-up shots. Cross Lines Spacing has a direct effect on polycount, as tighter spacing generates more lattice bracing members; use wider spacing for background towers.