**KTD-405 Controller Keypad**

The Calibur and Digiplex remote system control keypad shall be a Kalatel KTD-405.

1. The remote keypad shall have the following characteristics.
	1. The remote keypad shall be housed in an aluminum frame, with rugged ABS plastic end caps.
	2. The remote keypad shall have 40 integrated elastomeric, momentary push buttons.
		1. The push buttons shall be clearly labeled, alphanumerically or with symbols to indicate their purpose.
		2. At a minimum, the remote keypad shall have the following buttons:
			1. Mon button.
			2. View button.
			3. Zone button.
			4. Combination Number 1 / Picture-in-Picture / Monitor-A button.
			5. Combination Number 2 / 4-way multiscreen / Monitor-B button.
			6. Combination Number 3 / 9-way multiscreen / Monitor-C button.
			7. Combination Number 4 / 16-way multiscreen / Monitor-D button.
			8. Combination Number 5 / 32-way multiscreen / Monitor-E button.
			9. Number 6 button.
			10. Number 7 button.
			11. Number 8 button.
			12. Number 9 button.
			13. Number 0 button.
			14. Combination Clear / Esc button.
			15. Combination Set / Enter button.
			16. 1st button.
			17. Auto focus button.
			18. DSR/VCR button.
			19. Combination Open / Aux 1 button.
			20. Combination Close / Aux 2 button.
			21. Combination Stop / Aux 3 button.
			22. Combination Talk / Aux 4 button.
			23. Sequence button.
			24. Alarm button.
			25. Tour button.
			26. Store button.
			27. Find button.
			28. Single Frame Rewind button.
			29. Pause button.
			30. Single Frame Advance button.
			31. Stop button.
			32. Calibur Digital Zoom button.
			33. Rewind button.
			34. Play button.
			35. Fast Forward button.
			36. Record button.
			37. Search button.
			38. Zoom Plus / Minus button.
			39. Focus Plus / Minus button.
			40. Iris Plus / Minus button.
	3. The remote keypad shall have a 3 axis joystick located on the right hand side of the keypad.
		1. At a minimum, the joystick shall perform the following functions.
			1. Remote camera pan left and right.
			2. Remote camera tilt up and down.
			3. Remote camera zoom in and out.
			4. Digital recorder fast forward.
			5. Digital recorder rewind.
			6. Digital recorder skip forward.
			7. Digital recorder skip backward
			8. Digital recorder variable speed frame advance.
			9. Digital recorder variable speed frame rewind.
			10. Digital recorder return to pause.
			11. Digital recorder; pan left/right during digital zoom.
			12. Digital recorder; tilt up/down during digital zoom.
	4. The remote keypad shall have an LCD screen.
		1. At a minimum the LCD screen shall display the following information:
			1. The zone.
			2. The zone title.
			3. The camera number.
			4. The monitor number.
			5. Menu information for setup and configuration of the KTD-405.
2. The remote keypad shall have the following operational features.
	1. The remote keypad shall operate in either of three modes:
		1. Standard Digiplex mode
		2. Discrete Zone mode.
		3. Transparent Zone mode.
	2. While making selections in each mode, if the keys are not pressed for 10 seconds, the remote keypad shall return to the last entered selection.
	3. The remote keypad shall be microprocessor based.
	4. The remote keypad shall be compatible with all existing Calibur by Kalatel components, including:
		1. Multiplexers
		2. MMX (multiplexer/matrix switcher combination)
		3. DVMR (Digital Video Multiplexer Recorders)
		4. DVMRe (Ethernet capable Digital Video Multiplexer Recorders)
	5. The remote keypad shall be compatible with all existing Kalatel Digiplex components.
	6. The remote keypad shall communicate to Digiplex components via RS-422 digital signal over twisted-pair cable. Up to 64 keypad sites shall be able to operate in a CCTV system.
	7. The remote keypad shall provide the following Digiplex system control capabilities, including (but not limited to):
		1. Receiver programming access.
		2. PTZ/focus/iris controls.
		3. Preset positioning.
		4. Establishing pan/auto-pan limits.
		5. Manual/auto focus control.
		6. Variable speed control for Kalatel’s CyberDome.
	8. Full matrix switcher programming and operation for as many as 64 switched monitors.
	9. Control of video alarms and alarm interfaces.
	10. Multiplexer view control for as many as 64 devices.
	11. Control of remote access sites and auxiliary control receivers.
	12. Shall provide system programming including (but not limited to):
		1. System size.
		2. Monitor offset.
		3. Camera access.
		4. Monitor access.
		5. Multiplexer type.
		6. Multiplexer control.
		7. PTZ receiver setup.
		8. Sequencing.
		9. Alarm interface setup
		10. Video switcher setup
		11. CyberDome setup.
	13. Shall provide the following multiplexer view control commands.
		1. Select active multiplexer.
		2. Select video input
		3. Select monitor output 1 or 2.
		4. Switch live video
		5. Place multiplexer in sequence mode.
		6. View VCR playback.
		7. Operate electronic zoom.
		8. Step through multiple camera views.
	14. Shall provide password protection, allowing only authorized users access to keypad programming.
	15. Shall store all programmed data in non-volatile memory.
3. The remote keypad shall have the following physical specifications.
	1. Electrical
		1. Input Voltage: 9VAC/12 VDC
		2. Power Consumption: 5 Watts
	2. Connections and Interfaces
		1. Output 1: RS-485 modified Calibur protocol. RJ-45 connector.
		2. Output 2: RS-422 modified Digiplex protocol. RJ-45 connector.
		3. Output 3: RS-232. RJ-45 connector.
		4. Microcontrollers: 89C51 main CPU and RS-485 UART; 89C2051 – RS-422 UART; 89C2051 – RS-232 UART.
		5. NV Ram (two pieces): 64K I2C Type; One reserved for language conversion.
		6. Hard Programming: 8-position DIP switch.
	3. Controls
		1. Keys: 40 momentary buttons.
		2. Joystick: 3 axis
	4. Mechanical
		1. Weight: 1.95 lbs.
		2. Housing Construction: Aluminum with ABS plastic end caps.
		3. Color: Kalatel Gray
		4. Keys: Integrated rubberized molding (elastomere).