Custom Controllers
ALWAYS A SOLUTION

- miniatures
- joysticks
- grips
- levers
- wheels
- portables

WWW.SCIP-ENGINEERING.COM
Made in USA
ABOUT SCIP

SCIP stands for Specialist of Control Interfaces & Positioning. Although newly implanted in the US, our team has more than 15 years of know-how in the development and manufacture of military-grade control devices.

With a main focus on hand grips, joysticks, control wheels and other portable units, we provide solutions integrating a wide range of buttons and high-precision technologies such as strain gage, Hall-effect, optical and potentiometric. We also design custom-packaged for embedded electronic including communication interface and safety software.

With a strong experience built upon the renewed trust and loyalty of the most reputable Aerospace, Defense and Military customers, we can offer controllers’ configurations ranging from standard to fully customized for the most demanding applications and the harshest environments.

We differ from our competition through our neat integrations, our development flexibility, our device optimization notably on reducing the fatigue of Use and competitive pricing all combined with high execution reactivity. We are also full committed to help our customers to create new opportunities.

We design and manufacture in Orange County, California.

“Giving life to ever more innovative controllers is our mission, we are proud that they contribute to your success”

Cedric Duhamel, Founder
SCIP Engineering offers a wide range of rugged and reliable customized control devices for mission systems and subsystems suited for the following industries:

- Aerospace
- Defense
- Military
- Marine
- Medical
- Security
- Construction
- Industrial equipment

Our team has collaborated with all of these major players: (non-exhaustive list)
EADS/CASA, SAGEM DS, DCNS, THALES AVIONICS, EUROCOPTER, ECA EN, NEXTER, MBDA, SUPRAERO, RAFAEL, THALES TRAINING & SIMULATION, THALES SERVICES SAS, BARCO VIEW TEXEN, BOMBARDIER, ACE

Example of a few platforms where our solutions can be found:

- Airbus A380 & A400M
- Dassault Mirage F1
- DCNS Delta frigate
- DCNS “Scorpene” submarine
- DCNS “Barracuda” attack submarine
- DCNS “Le Terrible” SLNE submarine
- EADS C-295 Brezilian aircraft
- Mil MI-17 Helicopter
- Nexter ARX20, T40 & CPT40 turrets
- Sagem gunner’s control system
- Sagem commander’s control system
- Sukhoi SuperJet 100 (RRJ)
- Thales Air Defense weapon system
- Thales TACTIS Tactical simulator
- Thales CV90 tank simulator
- Barco microvista suitcase
OUR SOLUTION

Full service design and manufacturing partner.

From the first contact, SCIP Engineering creates a personalized assistance. Our existing configurations are often used as starting point. To offer the solution perfectly tailored to your needs, we realize an initial study with an innovative approach that includes a preliminary design. We then commit to an effective partnership that will accompany you throughout the realization of your project. We provide high-quality manufacturing and can guarantee your satisfaction.

1. Plan

Meeting your deadlines and our commitments is our priority. Our expert team identifies the key factors of success of your project and consolidates data that will generate and monitor the overall planning, the reviews, risks and compliance matrix. Deliverables and other milestones are then identified and immediately tracked.

Controller and end-user must become one when in action, ‘we are extremely attentive to comfort and control-force feedback’.
2. Design

With more than 15 years' experience in design and verification of HMI products, our engineering team fully masters technology and the art of integration. Our systems, mechanical, electromechanical, electronic and software experts are assisted by CAD and innovative simulation tools. They coordinate to most accurately meet each of your requirements. We also offer mockup and prototype builds and qualification tests certified by external laboratories for design validation.

3. Manufacturing

We manage a complex supply chain for quality, delivery and cost control. Each component is made by certified professionals and each critical part is made by local companies. The assembly and testing phases are performed in our facility and meet ISO9001:2008 and AS9100C quality standards. We also make sure that they are in accordance with Aerospace & Defense’s required high-level of performance standards.

4. Delivery

We ensure the labeling, packaging and export-compliance management of our finished products. Through the use of an advanced logistic platform, we guarantee on-time delivery. Post-delivery services offer repairs and refurbishing, sustaining engineering, obsolescence management and product tracking.
Based on a modular technology using aluminum castings or molded composite plastics, our controllers combined with a wide range of buttons (*pushbutton, trim, rocker, toggle, multiway, trigger, thumbstick*), will fit naturally under your fingers.

<table>
<thead>
<tr>
<th>MINIATURES</th>
<th>JOYSTICKS</th>
<th>GRIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MT1</strong> series ... <em>p9</em></td>
<td><strong>J10</strong> series ... <em>p16</em></td>
<td><strong>G10</strong> series ... <em>p21</em></td>
</tr>
<tr>
<td><strong>MT2</strong> series ... <em>p11</em></td>
<td><strong>J20</strong> series ... <em>p18</em></td>
<td><strong>G50</strong> series ... <em>p23</em></td>
</tr>
<tr>
<td><strong>MTS</strong> series ... <em>p13</em></td>
<td><strong>J50</strong> series ... <em>p19</em></td>
<td><strong>G60</strong> series ... <em>p25</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>G70</strong> series ... <em>p25</em></td>
</tr>
</tbody>
</table>

Provide us your requirements, we will deliver the appropriate solution.
**Applications:**
Medical & surgery equipment • Powered wheelchair controller • Tracking and flight control • Cursor controller • Land weapon control • Guide missiles control • Naval application • Turret control • Ground station control • Construction equipment • Off highway vehicles • Industrial vehicles • Armored vehicles • Radar systems • Laser sighting • Visual display • Drone control • CCTV camera systems • FLIR system • Robotics... and more.

**LEVERS**
- L00 series ... p26
- L10 series ... p26
- L20 series ... p27

**WHEELS**
- W10 series ... p27
- W20 series ... p28
- Y50 series ... p28
- Y60 series ... p29

**PORTABLES**
- PCU\(s\) series ... p29
- PCU\(^l\) series ... p30
- PCU\(^{XL}\) series ... p30
- PCU\(^{AERO}\) series ... p31
- PCU\(^{TACT}\) series ... p31
- **MT1** thumbstick force
- **MT2** thumbstick displacement
- **MTS** trigger switch
By measuring finger force without affecting hand dexterity, MT1 series provides an accurate control and a high-reliability through the use of strain gage technology. Analog outputs are proportional to the force applied onto the button in every X and Y direction. Waterproof and validation in option.

**Key features**
- Aerospace & Military grade
- Excellent proportional control
- Small size & high sensitivity
- Full & Half bridge circuits
- 1 Million mechanical cycle life
- Infinite resolution
- Switch validation in option
- Stainless steel case
- Waterproof
- RoHS compliant

**Applications**
- Guide missiles control
- Radar systems
- Tracking and flight control
- Visual display
- Robotic & medical

**Standards**
- MIL STD 810D /461
- MIL STD 1250
- DRTCA DO160E
- GAM EG13

**MT1 PART REFERENCE**

<table>
<thead>
<tr>
<th>Case type</th>
<th>Max output (excitation ±5Vdc)</th>
<th>Button style</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1. Ø12</td>
<td>A. 0.81 Vdc *</td>
<td>10. convex black plastic</td>
</tr>
<tr>
<td>T2. Ø15.8</td>
<td>B. 1.00 Vdc</td>
<td>11. convex grey plastic</td>
</tr>
<tr>
<td>T3. Ø19</td>
<td>C. 1.30 Vdc</td>
<td>20. concave black Aluminum</td>
</tr>
<tr>
<td>T4. Ø25</td>
<td>(not compatible with T5 Case)</td>
<td>21. concave clear Aluminum</td>
</tr>
<tr>
<td>T5. validation</td>
<td></td>
<td>30. stick black Aluminum</td>
</tr>
</tbody>
</table>

* Specific product possibility on request

---

**Mechanical characteristics**
- Operating force: 15 N
- Maximum torque on Button: 0.35 mN
- Permissible force at end of travel: 25 N
- Travel: 0.6 mm ±20%
- Validation travel: 1.5 mm ±20%
- Validation force: 20 N ±20%
- Mechanical life: 1,000,000 cycles

**Electrical characteristics**
- Nominal voltage: ±5 VDC
- Normal sensitivity: 54/66/87 mV/N ±20%
- Hysteresis: ±0.2% /SN/°C
- Sensibility temperature coeff.: ± 0.2%/SN°C
- Linearity error: ± 0.07 VDC
- Validation rating: 28 VDC, 2 A max
- Validation electrical life: 25,000 cycles

**General characteristics**
- Case: stainless steel
- Terminal: solder terminal
- Contact: silver with gold plate
- Front face humidity resistance: IP65
- Dielectric strength: 50V / 1 min
- Insulation resistance: > 100 Mohms @ 50V
- Operating temperature: -40°C to 71°C
- Storage temperature: -50°C to 85°C
- Weight: -
MT1 series

T1
FULL BRIDGE (4 TERMINALS)

T2
HALF BRIDGE (6 TERMINALS)

T3
HALF BRIDGE (6 TERMINALS)

T4
HALF BRIDGE (6 TERMINALS)

T5
HALF BRIDGE (6 TERMINALS)

VALIDATION

CONVEX BUTTON
CONCAVE BUTTON
STICK BUTTON

Made in USA
Specifications Subject To Change Without Notice

10 SCIP Catalog
MT2 series is the smallest package of proportional 2 axis joystick in Aerospace & Military markets. The use of non-contact technology in a metal case enables an excellent reliability and sturdiness. A wide variety of mechanical & electrical configurations are available to satisfy all applications. Full redundant outputs & validation are in option.

### Key features
- Aerospace & Military grade
- Contactless technology
- 1 & 2 axis in small package
- Analog or PWM outputs
- 1 Million mechanical cycle life
- Full redundant outputs available
- Switch validation in option
- Anodized aluminum case
- Waterproof
- RoHS compliant

### Applications
- Guide missiles control
- Radar systems
- Tracking and flight control
- Visual display
- Robotic & medical

### Standards
- MIL STD 810D /461
- MIL STD 1250
- RTCA DO160E
- GAM EG13

### Hall Effect Thumbstick Displacement

<table>
<thead>
<tr>
<th>Standard Thumbstick Displacement</th>
<th>Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mechanical characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Operating force</td>
<td>4.5 N ±20%</td>
</tr>
<tr>
<td>Maximum torque on Button</td>
<td>0.35 mN</td>
</tr>
<tr>
<td>Maximum applied force</td>
<td>200 N</td>
</tr>
<tr>
<td>Travel angle</td>
<td>±20° ±10%</td>
</tr>
<tr>
<td>Validation travel</td>
<td>-</td>
</tr>
<tr>
<td>Validation force</td>
<td>-</td>
</tr>
<tr>
<td>Mechanical life</td>
<td>1,000,000 all directions</td>
</tr>
<tr>
<td><strong>Electrical characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Angular resolution</td>
<td>12 bit</td>
</tr>
<tr>
<td>Supply Voltage Range</td>
<td>4.5 to 5.5 VDC</td>
</tr>
<tr>
<td>Reverse voltage max</td>
<td>-10 V</td>
</tr>
<tr>
<td>Overvoltage Max</td>
<td>20 V</td>
</tr>
<tr>
<td>Validation rating</td>
<td>-</td>
</tr>
<tr>
<td>Validation electrical life</td>
<td>-</td>
</tr>
<tr>
<td>Return to Center Voltage</td>
<td>±200 mV</td>
</tr>
</tbody>
</table>

### General characteristics
- Case: anodized aluminum
- Terminal: solder terminal
- Front face humidity resistance: IP65 IEC 60529
- EMC Immunity Level: EN61000-4-3
- EMC Emissions Level: EN61000-6-3:2001
- ESD: EN61000-4-2
- Operating temperature: -40°C to 71°C
- Storage temperature: -40°C to 85°C
- Weight: -

### MT2 PART REFERENCE

<table>
<thead>
<tr>
<th>MT2 - X XX X</th>
<th>Limiter</th>
<th>Outputs</th>
<th>Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0. Out1: 0.5-4.5V Out2: none</td>
<td>A1. Out1: 0.5-4.5V Out2: 0.5-4.5V</td>
<td>A2. Out1: 0.5-4.5V Out2: 4.5-0.5V</td>
<td>B0. Out1: PWM Out2: none</td>
</tr>
</tbody>
</table>

Specific product possibility on request
**MT2 series**

**DIMENSIONS**

![Dimensions Diagram]

**MOUNTING OPTIONS**

**FRONT MOUNT WITHOUT SPACER**

**REAR MOUNT WITH SPACER**

![Mounting Options Diagram]

**SUGGESTED PANEL OPENING**

**WIRING**

**SINGLE OUTPUT**

**WITHOUT VALIDATION**

![Single Output Without Validation Diagram]

**WITH VALIDATION**

![Single Output With Validation Diagram]

MT2-xA00  
MT2-xB00

**DUAL OUTPUT**

**WITHOUT VALIDATION**

![Dual Output Without Validation Diagram]

**WITH VALIDATION**

![Dual Output With Validation Diagram]

MT2-xA10  
MT2-xB20  
MT2-xB30

Made in USA
MTS triggers integrate momentary action switches in the smallest package that can be mounted in control grips and other portable units. A variety of configurations such as position number, flap guard and colours are available to satisfy different applications.

### Key features
- Aerospace grade
- Excellent force feedback
- Small size for easy integration
- Positive detent action
- Up to 5A switching capability
- Low level switching capability
- NO/NC double break outputs
- Available with flap guard
- Composite materials
- RoHS compliant

### Applications
- Hand grip
- Control grip
- Fire control

### Standards
- MIL STD 810D /461
- MIL STD 1250
- RTCA DO160E
- GAM EG13
- MIL-S-9487

### Mechanical characteristics

<table>
<thead>
<tr>
<th></th>
<th>single-position</th>
<th>two-position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating force</td>
<td>12 N</td>
<td>12 N</td>
</tr>
<tr>
<td>Release force</td>
<td>2 N</td>
<td>2 N</td>
</tr>
<tr>
<td>Operating force</td>
<td>-</td>
<td>35 N</td>
</tr>
<tr>
<td>Total travel</td>
<td>12°</td>
<td>12°</td>
</tr>
<tr>
<td>Total travel</td>
<td>-</td>
<td>22°</td>
</tr>
<tr>
<td>Flap guard rotate</td>
<td>&gt;0.015 N.m</td>
<td>&gt;0.015 N.m</td>
</tr>
<tr>
<td>Mechanical life</td>
<td>250,000 cycles</td>
<td>100,000 cycles</td>
</tr>
</tbody>
</table>

### Electrical characteristics

<table>
<thead>
<tr>
<th></th>
<th>single-position</th>
<th>two-position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>28 VDC</td>
<td>28 VDC</td>
</tr>
<tr>
<td>Current (resistive)</td>
<td>5 A</td>
<td>5 A</td>
</tr>
<tr>
<td>Current max</td>
<td>3 A</td>
<td>3 A</td>
</tr>
<tr>
<td>Electrical endurance (full load)</td>
<td>50,000 cycles</td>
<td>50,000 cycles</td>
</tr>
<tr>
<td>Low level</td>
<td>10 mA @ 30 mV</td>
<td>10 mA @ 30 mV</td>
</tr>
</tbody>
</table>

### General characteristics

<table>
<thead>
<tr>
<th></th>
<th>single-position</th>
<th>two-position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>black PA6.6</td>
<td>black PA6.6</td>
</tr>
<tr>
<td>Button</td>
<td>thermoplastic</td>
<td>thermoplastic</td>
</tr>
<tr>
<td>Terminal</td>
<td>solder, brass with gold</td>
<td>solder, brass with gold</td>
</tr>
<tr>
<td>Contact</td>
<td>silver with gold plate</td>
<td>silver with gold plate</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>50 V / 1min</td>
<td>50 V / 1min</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>&gt; 100 Mohms @ 50V</td>
<td>&gt; 100 Mohms @ 50V</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-40°C to 71°C</td>
<td>-40°C to 71°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-55°C to 85°C</td>
<td>-55°C to 85°C</td>
</tr>
<tr>
<td>Weight</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### MTS PART REFERENCE

<table>
<thead>
<tr>
<th>MTS – X X X X</th>
</tr>
</thead>
</table>

- **N# position**
  1. single
  2. two

- **Button color**
  B. black
  R. red
  G. gray

- **Flap guard**
  0. none
  B. black
  R. red

(* for single-position trigger: position operable when flap guard is lifted up
for two-position trigger: position 1 operable with flap guard
position 1 & 2 operable when flap guard is lifted up

www.scip-engineering.com
**DIMENSIONS**

MOM

MOM + FLAP GUARD

**ELECTRICAL WIRING & DIAGRAM**

Diagram representation in rest position P0

- SINGLE-POSITION: contains only (A) switch
- TWO-POSITION: contains (A) & (B) switches
JOYSTICKS

- **J10** compact 3D joystick
- **J20** medium joystick
- **J50** heavy joystick
J10 joystick is the perfect solution for limited space when precision fingertip control is required. Available in 1, 2 or 3 axis configurations, various handles & electrical outputs, its modularity coupled with a robust construction are suited for the most demanding applications.

Key features
- Precision in compact size
- Low operational force
- 1, 2 and 3 axis configurations
- Depth below panel <26mm
- 5 Million mechanical life
- Analog, PWM or SPI outputs
- Full redundant outputs available
- Switch validation in option
- Composite materials
- RoHS compliant

Applications
- Powered wheelchair controllers
- Construction equipment
- Industrial vehicle controls
- Medical & surgery equipment
- CCTV camera systems
- Robotics & CMM machines

Standards
- MIL STD 810D /461
- MIL STD 1250
- GAM EG13

J10 PART REFERENCE

<table>
<thead>
<tr>
<th>Limiter</th>
<th>Handle</th>
<th>XY outputs</th>
<th>Lever force</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. single axis</td>
<td>1. ball</td>
<td>Out1: 0.5-4.5V Out2: none</td>
<td>1. 1N to 2.5N</td>
</tr>
<tr>
<td>2. dual axis</td>
<td>2. ball + protector</td>
<td>Out1: 0.5-4.5V Out2: 4.5-0.5V</td>
<td>2. 2N to 3.5N</td>
</tr>
<tr>
<td>3. round</td>
<td>3. tapered</td>
<td>Out1: none Out2: none</td>
<td>3. 3N to 4.5N</td>
</tr>
<tr>
<td>4. square</td>
<td>4. tapered + protector</td>
<td>Out1: PWM Out2: PWM</td>
<td></td>
</tr>
<tr>
<td>5. cross</td>
<td>5. straight + push-button</td>
<td>Out1: SPI Out2: SPI</td>
<td></td>
</tr>
<tr>
<td>6. ergo</td>
<td>6. ergo + push-button</td>
<td>Out1: SPI Out2: SPI</td>
<td></td>
</tr>
<tr>
<td>7. ergo + Z axis</td>
<td>7. ergo + Z axis + push-button</td>
<td>Out1: SPI Out2: SPI</td>
<td></td>
</tr>
<tr>
<td>8. ergo + Z axis</td>
<td>8. ergo + Z axis + push-button</td>
<td>Out1: SPI Out2: SPI</td>
<td></td>
</tr>
</tbody>
</table>

Specific product possibility on request
**DIMENSIONS**

**AXIS ORIENTATION**

**SUGGESTED PANEL OPENING**

**REAR MOUNT PANEL CUT-OUT**

**ELECTRICAL WIRING & DIAGRAM**

<table>
<thead>
<tr>
<th>Contact</th>
<th>Analog/PWM Outputs</th>
<th>SPI Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCC 1</td>
<td>VCC 1</td>
</tr>
<tr>
<td>2</td>
<td>GND 1</td>
<td>GND 1</td>
</tr>
<tr>
<td>3</td>
<td>Xout 1</td>
<td>/SS 1</td>
</tr>
<tr>
<td>4</td>
<td>Yout 1</td>
<td>SCLK 1</td>
</tr>
<tr>
<td>5</td>
<td>VCC 2</td>
<td>MOSI / MISO 1</td>
</tr>
<tr>
<td>6</td>
<td>GND 2</td>
<td>VCC 2</td>
</tr>
<tr>
<td>7</td>
<td>Xout 2</td>
<td>GND 2</td>
</tr>
<tr>
<td>8</td>
<td>Yout 2</td>
<td>/SS 2</td>
</tr>
<tr>
<td>9</td>
<td>Zout 1</td>
<td>SCLK 2</td>
</tr>
<tr>
<td>10</td>
<td>Zout 2</td>
<td>MOSI / MISO 2</td>
</tr>
<tr>
<td>11</td>
<td>Com button</td>
<td>Com button</td>
</tr>
<tr>
<td>12</td>
<td>NO button</td>
<td>NO button</td>
</tr>
</tbody>
</table>

(female cable connector Hirose DF11-12DS-2C)

Made in USA
Custom-made mechanics and electronics and includes a specific communication interface and also, product certification and qualification tests that will meet the most stringent requirements.

Contact our technical sales team about your requirements.

### Mechanical characteristics
- **Travel Angle**: until ±20° ±10%
- **Operating Force**: from 5 N to 30 N
- **Maximum applied force**: 500 N
- **Lever action**: friction or return to center
- **Limiter**: standard or custom design
- **Handle & button(s)**: standard or custom design
- **Mechanical life**: 10,000,000 all directions

### Electrical characteristics
- **Sensor technology**: Hall Effect, potentiometer, optical encoder or switches
- **Supply voltage**: 5, 10 or 24 VDC
- **Output interface**: voltage, current, PWM, serial, USB, CAN
- **Electrical connection**: according to your need

### General characteristics
- **Frame material**: aluminum alloy
- **Handle material**: thermoplastic or metal
- **Sealing (above the flange)**: IP67 IEC 60529
- **Operating temperature**: -25°C to 71°C
- **Storage temperature**: -40°C to 85°C

### Applications
- Military controller
- Off highway vehicles
- Industrial systems
- Robotics

### Standards
- **MIL STD 810D /461**
- **MIL STD 1250**
- **GAM EG13**

### Dimensions

---

**Medium Joystick**

Limitless configuration

J20 joystick’s modularity allows a very large range of control applications when the combination of functionalities is required. Rugged design in a low profile, custom handle and switches, mix of sensor technologies for a secure redundancy, high-reliability and a long-life capacity make it the most obvious choice for your project.
Heavy Joystick
Commander’s hand station

Robust mechanism, high precision sensors and excellent reliability, its proven technology is dimensioned to be used in extreme conditions. Available up to 4 axis movement, custom shape & paint, choice of buttons & communication interface, J50 series’ joystick is the ideal control solution for the most critical missions.

Key features
- Tailored-to-Your Needs solution
- Excellent force feedback
- High precision technology
- Extreme sturdiness
- Up to 4 axis with thumbstick
- Custom handle & buttons
- Custom base configuration
- Wide choice of sensors’ techno.
- Full redundant outputs available
- Choice of electrical interfaces
- Sealed to IP67
- Up to 15 million cycles
- Maintenance-free operation
- RoHS compliant

Applications
- Turret control
- Weapon system control
- Vehicle drive control
- Laser sighting

Standards
- MIL STD 810D /461
- MIL STD 1472F
- GAM EG13

Specifications Subject To Change Without Notice
GRIPS

- G10  universal hand grip
- G50  cobra & B8 style grip
- G60  cyclic & collective grip
- G70  side arm grip
G10 series’ grips are designed and developed to meet the majority of our customers’ needs for a precise finger operated control. Our modulable grip made of cast aluminum alloy provides a large variety of configuration depending on your choice of shape, switch, electronic interface and termination style.

G10 series’ solutions find commonly their place in industrial & military applications, but also in the simulation world.

The four major criteria that define a G10 hand grip are:
- choice of grip shape and finish,
- choice & position of switches, thumbstick and trigger,
- choice of electrical & electronic interfaces,
- choice of mounting interface and base option,

Contact our technical sales team about your requirements.

SCIP Engineering’s wide range of grip designs enable us to provide quick and precise solutions to any customer’s needs or requirements, including realistic 3D views.

Key features
- Tailored-to-Your Needs solution
- Military & Industrial grade
- Comfortable use
- Cast aluminum alloy
- Rugged construction
- Modular concept
- Up to 7 functions
- Analog or digital outputs
- Compatible with joystick base
- Op. temperature -40°C to 71°C
- RoHS compliant

Applications
- Target acquisition system
- Armoured vehicle fire control
- Weapons systems control
- Tracking & flight control
- Robotic & Industrial system
- Control pilot

Standards
- MIL STD 810D /461
- RTCA DO 160E
- GAM EG13

BASIC DIMENSIONS

www.scip-engineering.com
The shape of a grip is defined by its number of buttons/functions, as well as its embedded electronics and mounting type. Standard finish is a matte black polyurethane paint. The front panel can integrate 4-way trim or a miniature joystick such as a thumbstick force (MT1) or displacement (MT2) with or without a push-validation. A variety of trigger switches (F4) and palm switches (F5) types are available.

**A variety of electromechanical switches available (F1, F2, F3, F6 & F7):**

*with optional sealing boots & flap guards*

- pushbutton mom,
- 2-way trim mom,
- toggle,
- slide,
- rocker, ...

**ON-BOARD ELECTRONICS CAPACITY**

regulated voltage, serial RS232 /422 /485, PS2, CAN, PWM, USB, ...
Cobra & B8 style Grip
Flight control handle

G50 series represents the most popular aircraft control-grip. Our molded composite plastic grips use a specific material for higher robustness and lightweight. Optimized design allows easy maintenance and fast repair. Our custom configurations include 3 ergonomic heads, a variety of MIL switches and different termination styles.

G50 grips are pre-bored for an usual buttons integration (see table below). Upon request, we can customize your handle to integrate other types of electromechanical buttons & fixing elements.

Contact our technical sales team about your requirements.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Fixed-wing aircraft control, Rotary-wing aircraft control, Flight control, Flight simulators</td>
</tr>
<tr>
<td>Key features</td>
<td>Aircraft &amp; Defense industry, Use natural hand position, Non-reflecting surface, Standard MIL-specs design, Single or two part(s) construction, Rugged molded plastic grip, Fast switches replacement, Engraving &amp; marking available, Choice of mounting type, Highly economic handle, Lightweight, RoHS compliant</td>
</tr>
<tr>
<td>Standards</td>
<td>MIL STD 810D /461, MIL DTL 25561B, RTCA DO160E</td>
</tr>
</tbody>
</table>

BASIC DIMENSIONS

Cobra Control Grip representation

G50 grips are pre-bored for an usual buttons integration (see table below). Upon request, we can customize your handle to integrate other types of electromechanical buttons & fixing elements.

Contact our technical sales team about your requirements.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Fixed-wing aircraft control, Rotary-wing aircraft control, Flight control, Flight simulators</td>
</tr>
<tr>
<td>Key features</td>
<td>Aircraft &amp; Defense industry, Use natural hand position, Non-reflecting surface, Standard MIL-specs design, Single or two part(s) construction, Rugged molded plastic grip, Fast switches replacement, Engraving &amp; marking available, Choice of mounting type, Highly economic handle, Lightweight, RoHS compliant</td>
</tr>
<tr>
<td>Standards</td>
<td>MIL STD 810D /461, MIL DTL 25561B, RTCA DO160E</td>
</tr>
</tbody>
</table>

BASIC DIMENSIONS

Cobra Control Grip representation

G50 grips are pre-bored for an usual buttons integration (see table below). Upon request, we can customize your handle to integrate other types of electromechanical buttons & fixing elements.

Contact our technical sales team about your requirements.
G50 series’ hand grips can hold up to 6 different functions, trigger switch included. An overmolded metal insert within the base allows easy connection to your mounting (electrical connection and fixing element). We can also identify functions with engraving or any other marking process on all grip surfaces.

Example of a low-cost grip comprising of:
- a wire harness,
- a standard mounting type,
- commercial grade buttons.

Provide us your specification, we will quickly adapt our handle that will meet all your requirements with the guarantee of high-level quality.
G60 series is innovative, the aluminum control grip is made of several modules that can be nested together to form a multi-functional product. Design a new module to meet a precise need is fast & easy. Collective head, indicator light, backlighting and others. Flexibility of this concept redefines the limits of grip integration.

Product datasheet available soon, contact our technical sales team.

G70 series’ shape fits perfectly in armrest of control seat. His specific design coupled to a precise thumb operated control facilitates cursor control without fatigue of use. Push-buttons are arranged at each finger ends and optional electronic interface is available to communicate with most system requirements.

Product datasheet available soon, contact our technical sales team.
**L00 series**

**Lever Hand Control**  
*Contactless technology*

Single-axis hand controller with electronic output designed for use in a variety of off-road applications. This control unit is equipped with Hall-effect technology, non-contact sensor that can be programmed for analog or PWM output. This assembly is IP67 sealed allowing to be mounting inside or outside the cab.

Product datasheet available soon, contact our technical sales team.

**L10 series**

**Rugged Simple Lever**  
*A concentrated technology*

Simple lever made of aluminum alloy allows to meet the most demanding application when there is no space inside the control panel. Fully modulable in angle, notches and friction, electrical contacts and analog output sensors, this design is the best choice in high-end lever control of the market.

Product datasheet available soon, contact our technical sales team.
L20 series

Rugged Double Lever
A concentrated technology

Composed of two L10 series. Each lever can be operated independently or jointly thanks to mechanical lock/unlock system integrated in handles. This sealed and rugged double lever keeps fully characteristics of L10 series in a concentrated area above the control panel. Commonly used for marine applications.

Product datasheet available soon, contact our technical sales team.

W10 series

Compact Control Wheel
Robustness & Precision

Standard control station commonly used in simulation’s world. More economical to buy and use, come with a USB interface or direct outputs, a vertical or horizontal mount and custom colour. This rugged and compact wheel fits perfectly to simulate gunner or commander in military vehicles and battle tank. Optional redundant outputs.

Product datasheet available soon, contact our technical sales team.
W20 series

W20 series is the fully modulable version of SCIP control wheels. Custom handles and switches, tailor-mades’ embedded electronic allows to be compliant with a large majority of our customers’ needs. Its proven design gets success in all environmental testing, that’s ideal for the most critical missions.

Product datasheet available soon, contact our technical sales team.

Y50 series

Y50 series is made of an aluminum monolithic part. Easy to use thanks to all buttons placed at the level of pilot’s thumbs, his ergonomic handles provides comfort and perfect grip. More economical to buy, best ratio in quality/price, this design fits perfectly to commercial, regional and business jets around the world.

Product datasheet available soon, contact our technical sales team.
Modular Control Yoke
Full custom head

This yoke offers a large choice of functionalities thanks to these handle head fully customizable. Its design allows a lateral or horizontal hand grip control. Design a new handle head to meet a precise need is fast & easy. SCIP has a solution to meet the most demanding integration in jet control wheels.

Product datasheet available soon, contact our technical sales team.

PCU-S series

Small Handheld Controller
Rugged frame up to 6 functions

Durable and lightweight game style unit control. His ergonomic design allows for comfortable extended use. PCU-S series accommodates miniature joysticks, with a variety of button styles and colours. Ideal for controlling unmanned vehicles, unattended ground sensors and other remote controlled applications.

Product datasheet available soon, contact our technical sales team.
PCU-L series

Large Handheld Controller
Up to 12 buttons

PCU-L series provides large functionalities in a lightweight package. Rugged and high-reliability in extreme condition, up to 12 embedded functions comprised of trigger and palm switches in each side, this aluminum handheld unit will be the ideal solution for ground mission or controlling unmanned systems and weapons.

Product datasheet available soon, contact our technical sales team.

PCU-XL series

E-Large Handheld Controller
Up to 20 buttons

The most comprehensive military portable control unit, up to 20 buttons that fits perfectly under user’s fingers. This extra-large controller has thin-wall, investment cast aluminum for high strength and low weight. A variety of buttons, custom paint and electronic interface are available to meet the most demanding applications. Optional flat panel LCD will be available soon.

Product datasheet available soon, contact our technical sales team.
PCU-AERO series

Ergonomic Handheld Controller

Limitless

PCU-AERO series is dedicated to Aerospace applications. An ergonomically designed dual-handled grip providing all precise control functionality for camera system and others FLIR family. Fully customizable, this mighty controller provides a ruggedized solution and reliable control when operating in extreme environments.

Product datasheet available soon, contact our technical sales team.

PCU-TACT series

Tactical Handheld Controller

High-end technology

Experimental tactical command in progress. Built with aluminum alloy for robustness and lightweight, it integrates 5.6" touch screen for video, menu information and mapping. This unit will improve operator effectiveness by becoming the warfighter’s interface to mission situational awareness.

Product in development, contact our technical sales team.
CONTACT US

USA
MANUFACTURING FACILITY & HEADQUARTERS
4 Calle Del Norte
Rancho Santa Margarita, CA-92688
Phone: +1 (949) 346 6866

FRANCE
SCIP REPRESENTATIVE
25 Allee des Mimosas
Antibes, 06600
Phone: +33 6 58 49 32 85

Email: contact@scip-engineering.com
Website: www.scip-engineering.com