

**SAMSUNG TECHWIN**

# **CONTROLLER DI SISTEMA**

Manuale utente

SPC-6000



**SAMSUNG**

**SAMSUNG**

# Controller di sistema

## Manuale utente

---

### Copyright

©2011 Samsung Techwin Co., Ltd. Tutti i diritti riservati.

### Marchio

 **SAMSUNG TECHWIN** è il logo registrato di Samsung Techwin Co., Ltd.

Il nome di questo prodotto è un marchio registrato di Samsung Techwin Co., Ltd.

Gli altri marchi citati in questo manuale sono marchi registrati delle relative società.

### Limitazioni

Samsung Techwin Co., Ltd si riserva il copyright di questo documento. In nessun caso questo documento potrà essere riprodotto, distribuito o modificato, parzialmente o interamente, senza l'autorizzazione formale di Samsung Techwin.

### Declinazione di responsabilità

Samsung Techwin fa del suo meglio per verificare l'integrità e la correttezza dei contenuti del presente documento, ma non fornisce nessuna garanzia formale. L'uso di questo documento e i risultati che ne derivano ricadono interamente sotto la responsabilità dell'utente. Samsung Techwin si riserva il diritto di modificare i contenuti di questo documento senza preavviso.

- ❖ **Il progetto e le specifiche sono soggetti a modifiche senza preavviso.**
- ❖ **La password predefinita è esposta agli attacchi degli hacker, pertanto si consiglia di cambiare password dopo l'installazione del prodotto.**  
**Si ricorda che la responsabilità per problemi di sicurezza o altro genere derivanti dal non aver cambiato la password è a carico dell'utente.**

## ISTRUZIONI DI SICUREZZA IMPORTANTI

1. Leggere queste istruzioni.
2. Conservare queste istruzioni.
3. Rispettare tutti gli avvertimenti.
4. Seguire tutte le istruzioni.
5. Non utilizzare questo apparecchio vicino all'acqua.
6. Pulire solo con un panno asciutto.
7. Non bloccare nessuna apertura di ventilazione.  
Istallare seguendo le istruzioni del fabbricante.
8. Non installare vicino a fonti di calore quali caloriferi, stufe o altri prodotti (compresi gli amplificatori) che possano produrre calore.
9. Non eludere il sistema di sicurezza della spina polarizzata o a terra. Una spina polarizzata è costituita da due spinotti, uno più grande dell'altro. Una spina con presa a terra ha due spinotti e un terzo per la presa a terra. Lo spinotto più grande o il terzo spinotto sono stati previsti per la vostra sicurezza. Se la spina fornita non entra nella presa, mettersi in contatto con l'elettricista per la sostituzione della presa obsoleta.
10. Proteggere il cavo dell'alimentazione per evitare che sia calpestato o schiacciato, facendo particolare attenzione alle spine, alle prese e al punto in cui i cavi escono dell'apparecchio.
11. Utilizzare solo connettori/accessori indicati dal fabbricante.
12. Utilizzare solo carrelli, supporti, treppiedi, staffe o tavoli consigliati dal produttore o venduti assieme all'apparecchio. Qualora si utilizzi un carrello, spostare il gruppo carrello/apparecchio con attenzione per evitare che si ribalti provocando incidenti.
13. Durante forti temporali o se non viene utilizzato per lunghi periodi di tempo, scollegare l'apparecchio dall'alimentazione elettrica.
14. Rivolgersi a personale specializzato per qualsiasi riparazione.  
Le riparazioni sono richieste quando l'apparecchio viene in qualche modo danneggiato, ad esempio quando viene danneggiato il cavo di alimentazione o la spina, se è stato versato qualche liquido nell'apparecchio o vi sono caduti degli oggetti o se è stato esposto alla pioggia o all'umidità, se non funziona normalmente o se è caduto.



## AVVERTENZA

PER RIDURRE IL RISCHIO DI INCENDIO O DI SCOSSA ELETTRICA, NON ESPORRE L'APPARECCHIO A PIOGGIA O A UMIDITÀ. NON INSERIRE OGGETTI METALLICI ATTRAVERSO LE GRIGLIE DI VENTILAZIONE O ALTRE APERTURE DELL'APPARECCHIATURA.

Non schizzare o sgocciolare liquidi sull'apparecchio e non porre su di esso oggetti contenenti liquidi, come ad esempio vasi di fiori.

## ATTENZIONE

|                                                                                                                                                                                                                                 |                                                               |                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                                                                                                                                | <b>ATTENZIONE</b><br>RISCHIO DISCOSSA<br>ELETTRICA NON APRIRE |  |
| <b>ATTENZIONE : PER RIDURRE I RISCHI DI SCOSSA ELETTRICA,<br/>NON RIMUOVERE IL COPERCHIO (O IL PANNELLO POSTERIORE).<br/>ALL'INTERNO NON VI SONO PARTI CHE L'UTENTE POSSA<br/>RIPARARE. RIVOLGERSI A PERSONALE QUALIFICATO.</b> |                                                               |                                                                                   |

## SPIEGAZIONE DEI SIMBOLI GRAFICI



Il simbolo del fulmine con la freccia all'interno del triangolo avverte l'utente della presenza di una "tensione pericolosa" all'interno del prodotto, che può essere di intensità sufficiente per costituire un rischio di scossa elettrica alle persone.



Il simbolo del punto esclamativo all'interno del triangolo avverte l'utente della presenza di importanti istruzioni di funzionamento e manutenzione nella documentazione che accompagna il prodotto.

Leggere attentamente le seguenti precauzioni di sicurezza raccomandate.

|                                                                                                                                               |                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Non collocare l'apparecchio su superfici irregolari.</p>  | <p>Non installare su superfici esposte alla luce diretta del sole, vicino a fonti di calore o a zone di freddo intenso.</p>  |
| <p>Non collocare l'apparecchio nelle vicinanze.</p>          | <p>Non tentare di effettuare personalmente interventi di assistenza sull'apparecchio.</p>                                    |
| <p>Non collocare bicchieri d'acqua sul prodotto.</p>         | <p>Non installare vicino a sorgenti magnetiche.</p>                                                                          |
| <p>Non ostruire le aperture per la ventilazione.</p>         | <p>Non appoggiare oggetti pesanti sul prodotto.</p>                                                                          |

Il manuale utente è una guida all'uso dei prodotti

I simboli utilizzati nel manuale hanno i seguenti significati

- Riferimento : fornisce informazioni sull'uso del prodotto
  - Avvertenza : Se vi è la possibilità di danni a persone o oggetti provocati dalla mancata osservanza delle istruzioni
- ✗ Per ragioni di sicurezza, leggere questo manuale prima di utilizzare il prodotto e conservarlo in un luogo sicuro.



La tutela dell'ambiente è molto importante per Samsung Techwin, che ne tiene conto in ogni fase della fabbricazione dei suoi prodotti ed è alla ricerca costante di nuove soluzioni per fornire al cliente prodotti sempre più rispettosi dell'ambiente.

Il marchio Eco rappresenta la dedizione di Samsung Techwin nel creare prodotti nel rispetto dell'ambiente e indica che il prodotto soddisfa la Direttiva EU RoHS.



## **Corretto smaltimento del prodotto** (rifiuti elettrici ed elettronici)

(Applicabile nell'Unione Europea e in altri paesi europei con sistema di raccolta differenziata)

Il marchio riportato sul prodotto, sugli accessori o sulla documentazione indica che il prodotto e i relativi accessori elettronici (quali caricabatterie, cuffia e cavo USB) non devono essere smaltiti con altri rifiuti domestici al termine del ciclo di vita. Per evitare eventuali danni all'ambiente o alla salute causati dall'inopportuno smaltimento dei rifiuti, si invita l'utente a separare il prodotto e i suddetti accessori da altri tipi di rifiuti e di riciclarli in maniera responsabile per favorire il riutilizzo sostenibile delle risorse materiali.

Gli utenti domestici sono invitati a contattare il rivenditore presso il quale è stato acquistato il prodotto o l'ufficio locale preposto per tutte le informazioni relative alla raccolta differenziata e al riciclaggio per questo tipo di materiali.

Gli utenti aziendali sono invitati a contattare il proprio fornitore e verificare i termini e le condizioni del contratto di acquisto. Questo prodotto e i relativi accessori elettronici non devono essere smaltiti unitamente ad altri rifiuti commerciali.

# INDICE

## PANORAMICA

3

- 3 Istruzioni di sicurezza importanti
- 7 Indice
- 9 Caratteristiche principali
- 10 Contenuto della confezione
- 11 Il controller di sistema in breve

## INSTALLAZIONE

14

- 14 Precauzioni
- 15 Prima dell'installazione
- 15 Regolazione dell'angolazione del controller di sistema
- 16 Cambio della posizione del joystick e del modulo jog/shuttle

## COLLEGAMENTO A UN DISPOSITIVO ESTERNO

17

- 17 Per collegare un dispositivo RS-485
- 23 Collegamento ad altri controller di sistema

## UTILIZZO DEL MENU

24

- 24 Operazioni preliminari
- 24 Controllo della telecamera PTZ
- 30 Controllo del DVR
- 32 Controllo della MATRIX

## IMPOSTAZIONE MENU

34

- 34 Per accedere al menu principale
- 34 Impostazione PTZ
- 35 Impostazione del DVR
- 35 Impostazione del controller
- 40 Aggiorna firmware
- 42 Per controllare le informazioni del controller

## APPENDICE

43

- 43 Specifiche
- 44 Domande e risposte
- 45 GPL/LGPL Software License

## CARATTERISTICHE PRINCIPALI

Il controller di sistema SPC-6000 consente di comandare dispositivi esterni di controllo quali telecamera PTZ, DVR, MATRICE usando la comunicazione RS-485.

Offre un'interfaccia di facile utilizzo con menu a video, touch screen e joystick.

- Telecomando a lunga distanza
- La portata massima della comunicazione RS-485 è di 1 km.
- Controllo del sistema integrato
- Con un solo controller di sistema è possibile comandare tutti i dispositivi: telecamera (unità ricevitore), DVR e MATRICE.
- Connessione di vari controller di sistema abilitata
- È possibile controllare il sistema in luoghi diversi e collegare fino a 16 controller contemporaneamente.
- Cambio della posizione del joystick e del modulo jog/shuttle
- Per la comodità dell'utente, le posizioni del joystick e del modulo jog/shuttle possono essere cambiate da sinistra e destra e viceversa.
- Interfaccia di facile utilizzo

Lo stato operativo del controller di sistema è visualizzato sullo schermo; il touch screen consente di selezionare un menu con facilità; il joystick consente una manipolazione semplice.

### ❖ Elenco della compatibilità

- Telecamera
- MATRIX  
SMX-25632
- DVR  
Serie SRD-XXXX, Serie SHR-8/7/6XXX, SVR-1670, SRD-480D

### ❖ Specifiche adattatore

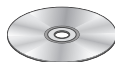
- Tensione: 1) Ingresso (AC): 100-240V  
2) Uscita (CC): 12V
- Capacità (corrente di uscita): 4A
- Carico nominale continuo: 48W
- Temperatura: 1) Temperatura di esercizio: 0 ~ +40°C  
2) Immagazzinamento: -20 ~ +60°C

## CONTENUTO DELLA CONFEZIONE

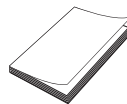
Disimballare il prodotto e collocarlo sul pavimento o su una superficie piana.  
Controllare che i seguenti componenti siano compresi nella confezione.



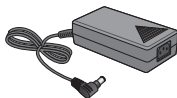
Unità principale



CD del Manuale Utente



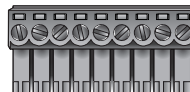
Guida rapida



Alimentatore (1x)



Cavo di alimentazione (1x)



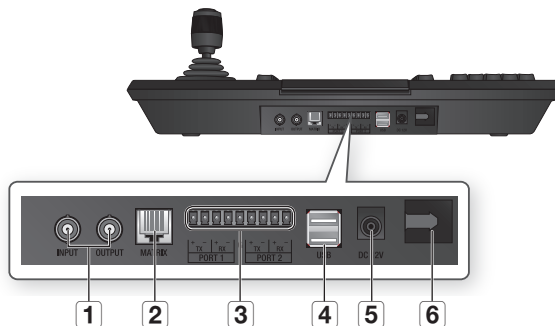
Morsettiera (1x)



# panoramica

| Elemento                                       |                                                                                               | Descrizione                                                                                     |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>7</b> Barra dell'obiettivo della telecamera | IRIS                                                                                          | Per controllare il diaframma (CLOSE/OPEN)                                                       |
|                                                | FOCUS                                                                                         | Per regolare la messa a fuoco (NEAR/FAR)                                                        |
|                                                | ZOOM                                                                                          | Per aumentare/ridurre lo zoom (WIDE/TELE)                                                       |
| <b>8</b> Navigazione, ENTER, ESC               | Navigazione                                                                                   | Navigazione tra le voci di menu                                                                 |
|                                                | ENTER                                                                                         | Per spostarsi su una voce desiderata utilizzando i pulsanti di navigazione e selezionarla.      |
|                                                | ESC                                                                                           | Per annullare l'operazione corrente.                                                            |
| <b>9</b> Tasti numerici (0-9)                  | Per specificare i caratteri numerici per telecamera, monitor, DVR o impostazioni predefinite. |                                                                                                 |
| <b>10</b> Barra di selezione del controller    | Per selezionare una telecamera, monitor o DVR.                                                |                                                                                                 |
| <b>11</b> Jog/Shuttle                          | Jog                                                                                           | Per eseguire la ricerca di fotogrammi avanti/indietro in modo di riproduzione DVR.              |
|                                                | Shuttle                                                                                       | Avanti/indietro/riproduzione/avanzamento rapido/avvolgimento rapido in modo di riproduzione DVR |

## Lato posteriore



| Elemento                       | Descrizione                                                                                                                                                                                                                  |                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>1</b> Ingresso/uscita video | Porta ingresso/uscita video                                                                                                                                                                                                  |                                                                                |
| <b>2</b> MATRIX                | Porta di collegamento matrice                                                                                                                                                                                                |                                                                                |
| <b>3</b> RS-485                | PORT 1                                                                                                                                                                                                                       | Collegata a un controller come telecamera o DVR mediante comunicazione RS-485. |
|                                | PORT 2                                                                                                                                                                                                                       | Collegata a un altro controller di sistema SPC-6000.                           |
| <b>4</b> Porta USB             | Per eseguire il backup delle impostazioni del controller di sistema o per aggiornare il firmware.                                                                                                                            |                                                                                |
| <b>5</b> Alimentazione         | Porta di ingresso CC 12V (— — — — — +)                                                                                                                                                                                       |                                                                                |
| <b>6</b> Gancio cavo           | Per impedire che il cavo di alimentazione si allenti.<br> ■ Utilizzare il gancio cavo durante l'installazione e l'utilizzo del controller. |                                                                                |

-  ■ La porta MATRIX contiene la linea di alimentazione, pertanto non è necessario fornire la tensione CC 12 V separatamente se si usa questa porta.
- La porta MATRIX contiene una sola linea che comanda i segnali di controllo principali e ausiliari.
- Il segnale MATRIX è di livello TTL.  
Utilizzare un cavo prolunga inferiore a 10 metri.

# installazione

---

## PRECAUZIONI

---

**Prima di installare il prodotto, leggere e osservare attentamente le seguenti istruzioni.**

- Il prodotto è progettato esclusivamente per l'uso al coperto.
- Tenerlo lontano da acqua o umidità.
- Non applicare una forza eccessiva su di esso.
- Non tirare il cavo di alimentazione con la forza.
- Non smontarlo.
- Utilizzare esclusivamente il campo I/O nominale.
- Utilizzare esclusivamente il cavo di alimentazione fornito.
- Utilizzare la spina di alimentazione con il filo della terra se disponibile.
- Installare il controller di sistema su un tavolo in piano.
- La posizione dell'unità principale e la posa del cablaggio sono essenziali per un corretto funzionamento del sistema.
- Se i dispositivi sono troppo vicini o sono collocati in ambiente con scarsa ventilazione, il sistema potrebbe non funzionare correttamente.  
Se il sistema è inaccessibile, risulta difficile o addirittura impossibile eseguire le riparazioni.
- Per prevenire i guasti e ridurre gli arresti del sistema, lasciare spazio sufficiente per la ventilazione e chiudere bene il coperchio.
- Non smontare il controller di sistema: al suo interno è presente alta tensione.
- Temperatura di esercizio: 0°C - 40°C
- Temperatura di conservazione: -20°C - 60°C
- Umidità di esercizio: 10%-70% RH
- Umidità di conservazione: 10% ~ 90% RH
- Consumo di energia: CC 12V, max 4 W ( — — — — — )

## PRIMA DELL'INSTALLAZIONE

- Spegner il prodotto prima di installarlo.
- Forti urti e vibrazioni potrebbero danneggiare il sistema.
- Tenerlo lontano da forti campi magnetici o interferenze elettriche e da apparecchi wireless quali radio e televisori.
- Tenere sempre il luogo di installazione pulito e privo di polvere, durante e dopo l'installazione.
- Collocarlo su una superficie piana e aperta, mantenendo una temperatura ottimale. Installarlo ad almeno 15 cm dalla parete.
- Non chiudere il foro di aerazione e non porre sopra di esso oggetti conduttivi.
- Non esporlo alla luce diretta del sole. Tenere gli accessori o gli strumenti fuori dalla portata delle persone al fine di prevenire il rischio di danni fisici.
- Se il prodotto emette un odore insolito o fumo, significa che vi è una condizione di anomalia, che potrebbe provocare incendi o scosse elettriche. In questo caso, spegnere immediatamente il prodotto e contattare il servizio di assistenza tecnica.
- Intervenire in modo adeguato se si rilevano: pavimento umido, prolunga del cavo di alimentazione senza messa a terra, cavo di alimentazione spelato o assenza di messa a terra di sicurezza.



- Per pulire il prodotto utilizzare un panno asciutto. Se il prodotto è molto sporco o macchiato, pulirlo con un panno imbevuto di detergente neutro. Non utilizzare solventi volatili come alcol, benzene o diluente, poiché potrebbero danneggiare la superficie del prodotto.
- Non accendere il display LCD in presenza di temperature elevate; si consiglia di usare il salvaschermo per risparmiare energia.

## REGOLAZIONE DELL'ANGOLAZIONE DEL CONTROLLER DI SISTEMA

È possibile tirare lo schermo in avanti per una migliore visualizzazione.



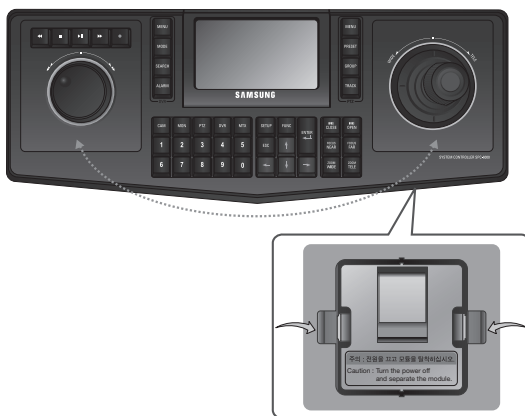
# installazione

## CAMBIO DELLA POSIZIONE DEL JOYSTICK E DEL MODULO JOG/SHUTTLE

È possibile cambiare la posizione del joystick e del modulo jog/shuttle a seconda di come è più comodo per l'utente.



- Per cambiare la posizione da destra a sinistra, spegnere il controller di sistema e cambiare manualmente la posizione dei moduli. Oppure premere **<Cambia>** nel menu di configurazione del controller e cambiare i moduli manualmente. (► pagina 38)



<Sotto>

1. Premere verso il basso i due ganci posti nella parte inferiore del controller di sistema per rimuovere il modulo.
2. Rimuovere il joystick e il modulo jog/shuttle dal controller e cambiarli di posizione. Al termine dell'operazione, inserirli finché non si sente uno scatto.



# collegamento a un dispositivo esterno

Il controller di sistema SPC-6000 può essere utilizzato in combinazione con un dispositivo esterno come ad esempio una telecamera o un DVR.

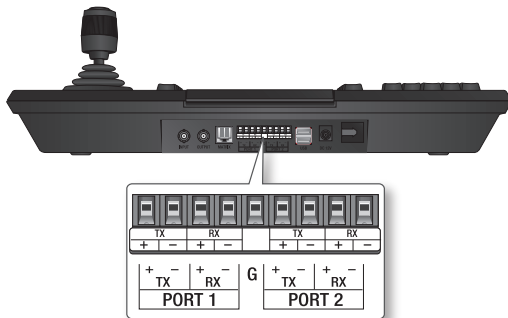
## PER COLLEGARE UN DISPOSITIVO RS-485

Con il controller di sistema, è possibile controllare una telecamera PTZ o un DRV compatibili con i protocolli di comunicazione RS-485.

1. Collegare la porta posteriore PORT 1 con la porta RS-485 della telecamera PTZ o del DVR.
2. A seconda del sistema del dispositivo esterno, selezionare Half Duplex o Full Duplex per la connessione.

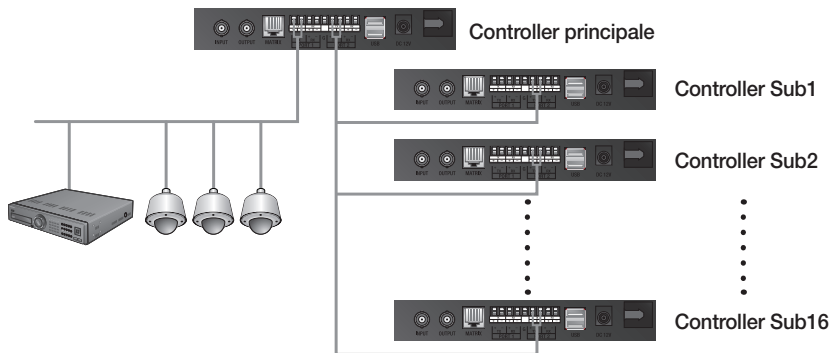


- Per il sistema Half Duplex, utilizzare i terminali TX +/-.
- Per la comunicazione RS-485, prestare particolare attenzione alla polarità (+/-).
- Utilizzare la morsettiera compresa nella confezione del prodotto.
- Controllare se il dispositivo RS-485 è compatibile con SPC-6000.

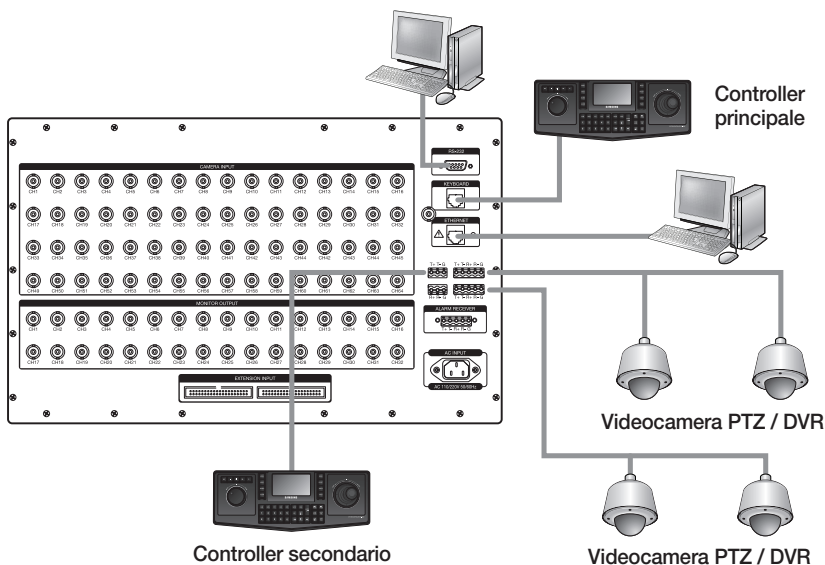


# collegamento a un dispositivo esterno

**Se si collega la tastiera senza utilizzare MATRIX**



## Se si collega la tastiera utilizzando MATRIX



1. Collegare la porta **[MATRIX]** del controller principale alla porta **[KEYBOARD]** della matrice.  
La porta MATRIX contiene la linea di alimentazione, pertanto non è necessario fornire la tensione CC 12 V separatamente.
2. Collegare TX+ e TX- del controller secondario rispettivamente a T+ e T- della matrice.
  - La velocità di trasmissione tra i controller secondari in sincronizzazione con MATRIX verrà fissata a 9600 bit/sec.
  - Il ID MATRICE è fissato a <SUB 09>.
3. Collegare il DVR e la telecamera PTZ alla MATRIX.

# collegamento a un dispositivo esterno

## Collegamento della telecamera PTZ

Collegando la porta RS-485 nella parte posteriore della telecamera PTZ con la PORT 1 di SPC-6000, è possibile controllare la telecamera.



- La polarità potrebbe differire a seconda della telecamera.

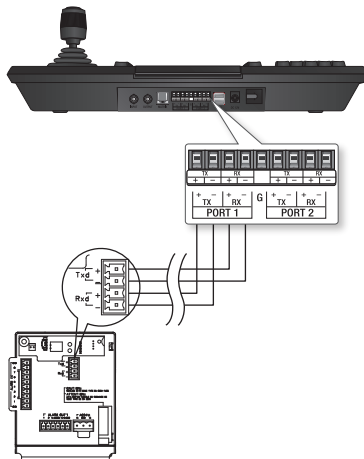
Per ulteriori informazioni, consultare il manuale utente della telecamera PTZ.

### Per il sistema half duplex

- Collegare RX (+) della porta RS-485 della telecamera PTZ con TX (+) di PORT 1 di SPC-6000.
- Collegare RX (-) della porta RS-485 della telecamera PTZ con TX (-) di PORT 1 di SPC-6000.

### Per il sistema full duplex

- Collegare RX (+) della porta RS-485 della telecamera PTZ con TX (+) di PORT 1 di SPC-6000.
- Collegare RX (-) della porta RS-485 della telecamera PTZ con TX (-) di PORT 1 di SPC-6000.
- Collegare TX (+) della porta RS-485 della telecamera PTZ con RX (+) di PORT 1 di SPC-6000.
- Collegare TX (-) della porta RS-485 della telecamera PTZ con RX (-) di PORT 1 di SPC-6000.



## Collegamento della serie SRD-16XX/8XX, DVR serie SHR-8/7/6XXX

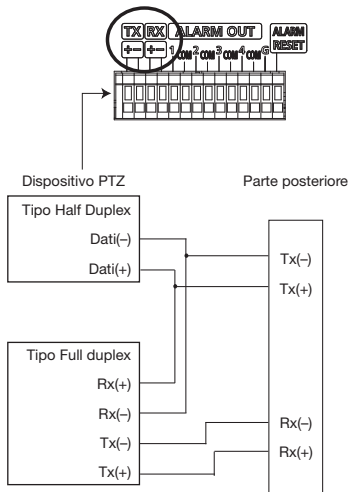
Effettuare il collegamento tra DVR e SPC-6000 usando la porta RS-485 nella parte posteriore del DVR.

### Per il sistema half duplex

- Collegare TX (+) della porta RS-485 del DVR con TX (+) di PORT 1 di SPC-6000.
- Collegare TX (-) della porta RS-485 del DVR con TX (-) di PORT 1 di SPC-6000.

### Per il sistema full duplex

- Collegare TX (+) della porta RS-485 del DVR con RX (+) di PORT 1 di SPC-6000.
- Collegare TX (-) della porta RS-485 del DVR con RX (-) di PORT 1 di SPC-6000.
- Collegare RX (+) della porta RS-485 del DVR con TX (+) di PORT 1 di SPC-6000.
- Collegare RX (-) della porta RS-485 del DVR con TX (-) di PORT 1 di SPC-6000.



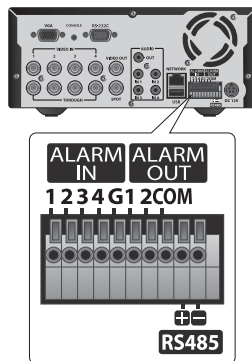
# collegamento a un dispositivo esterno

## Collegamento della serie SRD-4XX o SHR-604X a un DVR

Collegare la porta RS-485 nella parte posteriore della serie SRD-4XX o SHR-604X a SPC-6000.

### ❖ Per il sistema half duplex

- Collegare TX (+) di SRD-4XX o SHR-604X con TX (+) di PORT 1 di SPC-6000.
- Collegare TX (-) di SRD-4XX o SHR-604X con TX (-) di PORT 1 di SPC-6000.

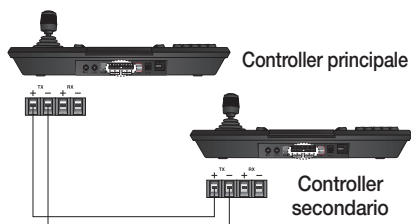


## COLLEGAMENTO AD ALTRI CONTROLLER DI SISTEMA

- È possibile collegare fino a 16 controller contemporaneamente.
- Per le impostazioni di comunicazione del controller, fare riferimento a "El.second." di "Impostazione Menu". (► pagina 37)

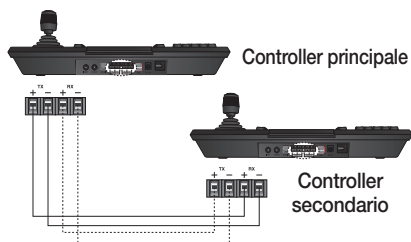
### Per il sistema half duplex

- Collegare TX (+) di PORT 2 di SPC-6000 con TX (+) di PORT 2 dell'altro SPC-6000.
- Collegare TX (-) di PORT 2 di SPC-6000 con TX (-) di PORT 2 dell'altro SPC-6000.



### Per il sistema full duplex

- Collegare TX (+) di PORT 2 del controller principale SPC-6000 con RX (+) di PORT 2 del controller secondario SPC-6000.
- Collegare TX (-) di PORT 2 del controller principale SPC-6000 con RX (-) di PORT 2 del controller secondario SPC-6000.
- Collegare RX (+) di PORT 2 del controller principale SPC-6000 con TX (+) di PORT 2 del controller secondario SPC-6000.
- Collegare RX (-) di PORT 2 del controller principale SPC-6000 con TX (-) di PORT 2 del controller secondario SPC-6000.



- È necessario utilizzare PORT 2 se si desidera eseguire il collegamento all'altro controller di sistema.

# utilizzo del menu

## OPERAZIONI PRELIMINARI

1. Accendere tutti i componenti del sistema.



2. Quando si collega l'alimentatore alla porta posteriore del controller di sistema, si apre la finestra di dialogo di accesso.
3. Utilizzare il tastierino numerico per inserire la password e premere **[ENTER]**.  
Si apre il menu principale del sistema di controllo PTZ.
  - La password predefinita è "4321".



## CONTROLLO DELLA TELECAMERA PTZ

### Per accedere al modo di controllo PTZ

Premere **[PTZ]** del controller.

### Per selezionare una telecamera

1. Utilizzare i tasti numerici per inserire il numero della telecamera desiderata.
2. Premere **[CAM]** o **[ENTER]**.



## Controllo Panoramica/Inclinazione

È possibile utilizzare il joystick del controller per regolare l'angolo Panoramica/Inclinazione della telecamera. Più è lontano dal centro del joystick, più aumenta la velocità di movimento.

## Zoom

Ruotare il joystick in senso orario o premere **[ZOOM TELE]** per controllare l'aumento dello zoom della telecamera.

Ruotare il joystick in senso antiorario o premere **[ZOOM TELE]** per controllare la riduzione dello zoom della telecamera.

## Messa a fuoco

Premere **[FOCUS FAR]** o **[FOCUS NEAR]** sul controller per adattare la messa a fuoco della telecamera.

## Diaframma

Premere **[IRIS OPEN]** o **[IRIS CLOSE]** sul controller per regolare la luminosità del video della telecamera.

## Preimp

Per spostare la videocamera in un punto predeterminato.

### Per impostare una preimpostazione

1. Selezionare la telecamera per cui si desidera impostare una preimpostazione.
2. Utilizzare il joystick per spostare la telecamera nel punto desiderato.
3. Premere **[SETUP]** e inserire un numero desiderato utilizzando i tasti numerici. Quindi premere **[PRESET]**.

### Per eseguire la preimpostazione

1. Selezionare una telecamera.
2. Inserire il numero desiderato utilizzando i tasti numerici e premere **[PRESET]**.
3. La preimpostazione viene eseguita.



- Per la serie di telecamere dome PTZ SCP-3430, SCP-2430, SCP-3250 e SCP-2250 sono supportate max. 512 preimpostazioni solo se è selezionato il protocollo E Samsung.

# utilizzo del menu

## Swing

È possibile spostare la telecamera tra due punti preimpostati per controllare il percorso.

### Configurazione dell'oscillazione

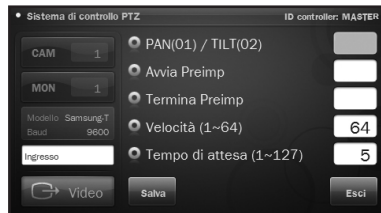
1. Selezionare <Swing> dalla schermata di menu.
2. Premere <Impostazione>.



3. Utilizzare i tasti numerici per selezionare PAN/TILT e specificare la preimpostazione di inizio e la preimpostazione di fine.
4. Specificare la velocità e il tempo di commutazione.
5. Premere <Salva>.

### Per eseguire l'oscillazione

1. Selezionare <Swing> dalla schermata di menu.
2. Utilizzare i tasti numerici per selezionare PAN o TILT per il tipo di oscillazione.
3. La funzione di oscillazione viene eseguita.

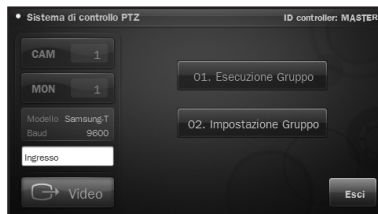


## Gruppo

È possibile creare un gruppo di preimpostazioni prima di richiamarle in sequenza.

### Per impostare un gruppo

1. Selezionare <Gruppo/Scan> dalla schermata di menu.
2. Selezionare <Impostazione Gruppo>.
3. Inserire un numero per il gruppo e premere [ENTER].
4. Specificare la velocità e il tempo di commutazione.
5. Premere <Salva>.



### Per eseguire la funzione di gruppo

1. Selezionare <Gruppo/Scan> dalla schermata di menu.
2. Selezionare <Esecuzione Gruppo>.
3. Inserire un numero per il gruppo e premere [ENTER].
4. La funzione di gruppo viene eseguita.



# utilizzo del menu

## Tour

È possibile effettuare un tour di almeno un gruppo prima di eseguire i gruppi in sequenza.

### Per impostare un tour

1. Selezionare <Tour> dalla schermata di menu.
2. Selezionare <Impostazione Tour>.
3. Ogni volta che si preme il numero di un gruppo da aggiungere al tour, il gruppo viene aggiunto al tour.
  - È possibile aggiungere fino a 6 gruppi a un tour.
4. Premere <Salva> per applicare le impostazioni.



### Per eseguire la funzione di tour

1. Selezionare <Tour> dalla schermata di menu.
2. Selezionare <Esecuzione Tour>.
3. La funzione di tour viene eseguita.

## Traccia

Con il joystick o i tasti della telecamera è possibile impartire al controller l'ordine di registrare il movimento della telecamera per un determinato periodo di tempo e ripetere il movimento.

### Per impostare una traccia

1. Selezionare <Traccia/MODELLO> dalla schermata di menu.
2. Selezionare <REGISTRA>.
3. Specificare un numero di traccia da registrare.
4. Con il joystick o i tasti della telecamera, controllare il movimento della telecamera nel modo desiderato.



### Per eseguire una traccia

1. Selezionare <**Traccia/MODELLO**>> dalla schermata di menu.
2. Selezionare <**RIPR**>.
3. Specificare un numero di traccia da eseguire.
4. La funzione di traccia viene eseguita.



### Messa a fuoco automatica

1. Selezionare <**A/F**> dalla schermata di menu.
2. La funzione di messa a fuoco automatica viene attivata.

### Reimposta

1. Selezionare <**Reimposta**> dalla schermata di menu.
2. La telecamera viene resettata.

### Blocco Target

1. Selezionare <**Blocco Target**> dalla schermata di menu.  
Appare una casella rettangolare sul video della telecamera.
2. Spostarsi su un oggetto di cui eseguire la tracciatura e premere [ENTER].
  - È valido solo per le telecamere che supportano la funzione di tracciatura.



### Track

1. Selezionare <**Track**> dalla schermata di menu.
2. La funzione di tracciatura viene eseguita.
  - È valido solo per le telecamere che supportano la funzione di tracciatura.

# utilizzo del menu

## CONTROLLO DEL DVR

La funzioni potrebbero differire a seconda del modello di DVR.  
Per i dettagli, consultare il relativo manuale utente.



- Un'impostazione non corretta può provocare problemi nell'utilizzo del DVR.

### Per selezionare un DVR

1. Premere **[DVR]**.
2. Utilizzare i tasti numerici per inserire un numero di DVR (0-255) e premere **[ENTER]**.



3. Si apre la schermata di menu principale.  
È diversa a seconda del modello.



- Per i DVR che supportano i protocolli SRD, la schermata di menu visualizza solo le voci di menu disponibili.
- Se si collega un DVR che supporta i protocolli SRD, le impostazioni PTZ vengono eseguite automaticamente.



## Per selezionare un canale DVR

1. Utilizzare i tasti numerici per inserire il numero del canale DVD desiderato.
2. Premere [CAM].

## Per controllare il menu del DVR

1. Per controllare i menu del DVR selezionato, premere [MENU] nella barra di controllo del DVR.
2. Utilizzare i tasti di direzione per passare a una voce di menu desiderata e premere [ENTER].

## Per controllare il dispositivo PTZ collegato al DVR

A seconda del modello di DVR, potrebbe non essere possibile controllare il dispositivo PTZ collegato al DVR.

In questo caso, premere [PTZ] per passare dal modo di controllo DVR al modo di controllo della telecamera.

## Per controllare il dispositivo PTZ nel modo DVR

1. Premere [PTZ] nell'angolo in basso a destra della schermata di menu del DVR.
2. Utilizzare il joystick per controllare la telecamera PTZ in connessione con il DVR.  
Per maggiori dettagli consultare il manuale utente del DVR.

## Accesso al DVR

È necessario accedere al menu del DVR con l'account utente corretto.

- Selezionare <Ingresso> per disattivare la casella di input. Ora è possibile utilizzare soltanto i tasti numerici per cambiare canale o inserire la password del DVR senza usare il pulsante [CAM].  
Selezionare di nuovo <Ingresso> per tornare al modo precedente.



# utilizzo del menu

## CONTROLLO DELLA MATRIX

### Per controllare il monitor e la telecamera in modo Matrix

È possibile controllare il monitor e la telecamera nel modo Matrix.

1. Premere [MTX].
2. Selezionare un numero di monitor e premere [MON].
3. Selezionare un numero di videocamera e premere [CAM].  
Il monitor selezionato riproduce il video della telecamera selezionata.



### Per riprodurre il video corrente sul monitor precedente

Inserire il numero della telecamera da selezionare.

1. Premere il numero della telecamera nella schermata di configurazione della matrice e premere [CAM].
2. Il monitor precedente riproduce il video della telecamera correntemente selezionata.

### Selez.auto

È possibile creare un programma di operazioni nel menu di configurazione Matrix.

1. Selezionare un numero di monitor nel menu di configurazione Matrix e premere [MON].
2. Dalla schermata di menu, premere <Selez.auto Imp.>.



3. Quando viene visualizzata la schermata <Selez.auto Imp.>, selezionare un monitor e una telecamera da collegare e specificare il tempo di commutazione.
4. Al termine delle impostazioni della telecamera N. 1, premere <Continua> e specificare il tempo di commutazione per la telecamera N. 2.
5. Al termine dell'impostazione del tempo di commutazione, premere <Salva>.



## Eseg. / Pausa

Eseg./Pausa esegue o mette in pausa l'impostazione Selez.auto che è stata effettuata.

Premere la combinazione <Tut> + <Eseg.> per eseguire Selez.auto durante l'impostazione.

Premere la combinazione <Tut> + <Pausa> per interrompere l'esecuzione di Selez.auto ed effettuare l'inserimento.



- Per impartire un'istruzione a un singolo monitor, premere una combinazione di "numero monitor" + <Eseg.> oppure "numero monitor" + <Pausa>.

## Ripr.allarme

Se il sensore viene attivato in modo Riproduzione allarme, la sirena si attiva se nell'unità di allarme la sirena è impostata su ON, oppure è possibile controllare i dispositivi esterni utilizzando gli indicatori se per l'unità di allarme è impostata l'uscita di controllo indicatore.

Per attivare l'allarme dell'unità di allarme, premere di nuovo <Ripr.allarme>.

# impostazione menu

## PER ACCEDERE AL MENU PRINCIPALE

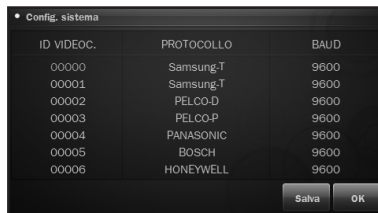
1. Premere il tasto **[FUNZ]** del controller e fare clic su **[CONFIG]**.
2. Quando viene visualizzata la schermata di configurazione di sistema, selezionare la voce di menu desiderata.



## IMPOSTAZIONE PTZ

Dalla schermata di configurazione PTZ, è possibile specificare il protocollo e la velocità di trasmissione.

1. Premere **<PTZ>** dalla schermata principale di configurazione.
2. Utilizzare i tasti di direzione o il joystick per passare a un menu desiderato.
3. È possibile cambiare le impostazioni utilizzando **[ZOOM WIDE]** o **[ZOOM TELE]**.
4. Al termine delle impostazioni del protocollo e della velocità di trasmissione, premere **<Salva>**.
5. Per uscire dalla schermata Configurazione PTZ, premere **<OK>** o **[ESC]**.



- Prima di passare a un'altra pagina, salvare le impostazioni.

## IMPOSTAZIONE DEL DVR

Dalla schermata di configurazione del DVR è possibile specificare il tipo di DVR e la velocità di trasmissione.

1. Dalla schermata principale di configurazione, premere <DVR>.
2. Utilizzare i tasti di direzione o il joystick per selezionare un numero di videocamera e specificare il tipo di DVR.
3. Specificare la velocità di trasmissione.
4. A operazione ultimata, premere <Salva>.
5. Per uscire dalla schermata Impostazione DVR, premere <OK> o [ESC].



■ Prima di passare a un'altra pagina, salvare le impostazioni.

## IMPOSTAZIONE DEL CONTROLLER

### ID Controller

È possibile selezionare RS-485 o RS-422 per il sistema di comunicazione.

1. Selezionare RS-485 o RS-422 per il sistema di comunicazione tra il controller e i dispositivi esterni.
2. Premere il pulsante Porta per specificare l'ID della porta.



# impostazione menu

---

## ID PORTA 1

---

È possibile specificare l'ID del controller da utilizzare per la comunicazione con altri dispositivi.

1. Premere **[Port 1]** dalla schermata di configurazione dell'ID del controller.
2. Specificare l'ID e premere **<Salva>**.

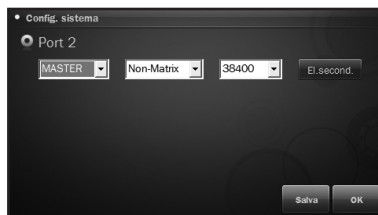


## ID PORTA 2

---

È possibile specificare il controller principale o secondario per le comunicazioni tra i controller, e anche impostare l'utilizzo della matrice e dell'elenco secondario.

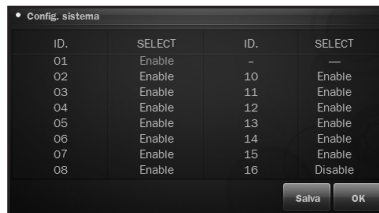
1. Premere **[Port 2]** dalla schermata di configurazione dell'ID del controller.
2. Utilizzare i tasti di direzione per selezionare la voce desiderata e selezionare un sistema di comunicazione tra i controller.
  - In un ambiente con più controller è necessario impostare l'elenco secondario.
3. A operazione ultimata, premere **<Salva>**.



## El.second.

Per un sistema di comunicazione che comprende controller principale e secondari, è necessario impostare <El.second.>.

1. Premere <El.second.>.
2. Utilizzare i tasti di direzione per selezionare la voce desiderata e configurare le impostazioni utilizzando [ZOOM WIDE] o [ZOOM TELE].
  - L'ID MATRICE è predefinito su <SUB 09>.
3. A operazione ultimata, premere <Salva>.
4. Per uscire dalla schermata <El.second.>, premere [OK] o [ESC].



## Utilizzo dei tasti del joystick

È possibile impostare il funzionamento dei tasti del joystick.

1. Premere <Pulsante> del joystick.
2. Dalla schermata delle funzioni dei tasti del joystick, selezionare un tasto funzione per il tasto del joystick selezionato.
3. Controllare l'impostazione corrente, premere <Esci>.



## Salvaschermo

È possibile impostare l'attivazione del salvaschermo se non si intende utilizzare il controller per molto tempo.

1. Per visualizzare la schermata del logo, impostare il salvaschermo su <On>.
2. Per applicare le modifiche, premere <OK>; per annullare l'impostazione, premere <Esci>.

# impostazione menu

## Impost. predef.

È possibile annullare le impostazioni correnti e tornare alle impostazioni predefinite.

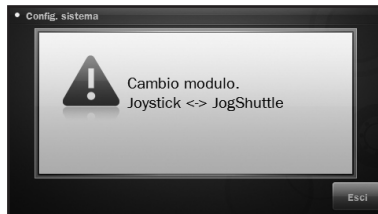
1. Premere <Reimp.>.
2. Premere <OK>.  
Le impostazioni correnti ritornano alle impostazioni predefinite.
3. Per uscire dal menu, premere <Esci>.



## Per selezionare i moduli

È possibile cambiare la posizione tra jog/shuttle e il joystick da sinistra a destra e viceversa.

1. Premere <Cambio>.
2. Dalla schermata Cambia modulo che viene visualizzata, è possibile cambiare la posizione tra jog/shuttle e il joystick.
3. Per uscire dalla schermata, premere <Esci>.



## Lingua

È possibile selezionare la lingua desiderata per l'interfaccia utente.

1. Premere <Lingua>.
2. Dalla schermata di selezione Lingua che viene visualizzata, utilizzare i tasti di direzione o il joystick per selezionare la lingua preferita.
  - Viene impostata immediatamente la lingua selezionata.
3. Per uscire dalla schermata di selezione della lingua, premere <Esci>.



## Password

È possibile impostare se attivare o disattivare la password per il controller.

1. Premere il pulsante <Imp.> password.
2. Per attivare la password, impostarla su <On>. In caso contrario, impostarla su <Off>.
3. Indicare la password corrente.
4. Per applicare le modifiche, premere <OK>; per annullare l'impostazione, premere <Esci>.



## Per cambiare la password

È possibile cambiare la password.

1. Premere il pulsante <Imp.> password.
2. Indicare la password corrente.
3. Indicare una nuova password.
4. Per applicare le modifiche, premere <OK>; per annullare l'impostazione, premere <Esci>.



- La password predefinita è "4321".



- La password predefinita è esposta agli attacchi degli hacker, pertanto si consiglia di cambiare password dopo l'installazione del prodotto.  
Si ricorda che la responsabilità per problemi di sicurezza o altro genere derivanti dal non aver cambiato la password è a carico dell'utente.

# impostazione menu

## AGGIORNA FIRMWARE

È possibile aggiornare il firmware corrente utilizzando i file del firmware della memoria USB.

### Per aggiornare il firmware del controller

È possibile scaricare gli ultimi file del firmware e aggiornare il controller.

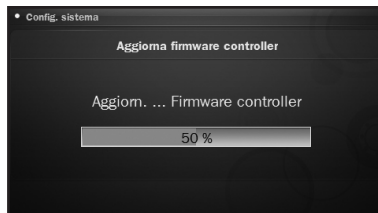
1. Collegare la memoria USB che contiene gli ultimi file del firmware al controller di sistema.
2. Dalla schermata di configurazione dei menu, premere **<Aggiorna>**.
3. Premere **<Aggiorna firmware controller>**.



4. Dalla schermata di aggiornamento, premere **<OK>**. Lo stato dell'aggiornamento viene visualizzato nella barra di avanzamento.
5. Attendere il riavvio del sistema dopo l'aggiornamento.



- Non scollegare la memoria USB o il cavo di alimentazione durante l'aggiornamento. In caso contrario, l'aggiornamento del firmware potrebbe fallire, o si potrebbe verificare un errore di sistema.



## Per eseguire il backup delle impostazioni del controller

Per cambiare il controller o sostituire la telecamera, è possibile salvare le impostazioni del controller in un file e caricarle in una nuova telecamera.

1. Dalla schermata di configurazione dei menu, premere **<Aggiorna>**.
2. Premere **<Backup imp. controller>**.
3. Premere **<OK>**.  
Il processo di backup inizia.



- Non scollegare la memoria USB o il cavo di alimentazione durante il backup. Altrimenti il backup delle impostazioni del controller potrebbe fallire.



## Per ripristinare le impostazioni del controller

Se il controller non è stato impostato correttamente o resettato è possibile caricare le impostazioni correnti su un altro controller.

1. Dalla schermata di configurazione dei menu, premere **<Aggiorna>**.
2. Premere **<Ripristina imp. controller>**.
3. Premere **<OK>**.  
Il processo di ripristino inizia.



- Non scollegare la memoria USB o il cavo di alimentazione durante il ripristino. Altrimenti il ripristino delle impostazioni del controller potrebbe fallire.



# impostazione menu

---

## PER CONTROLLARE LE INFORMAZIONI DEL CONTROLLER

---

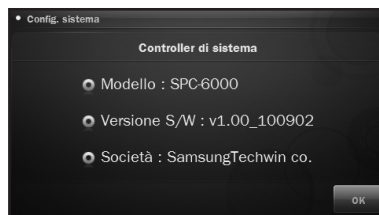
È possibile controllare il nome del modello e la versione del software del controller di sistema.

### Schermata di stato

---

È possibile controllare lo stato del controller.

1. Dalla schermata di configurazione dei menu, premere **<Stato>**.
2. Controllare lo stato del controller.



# appendice

## SPECIFICHE

| Elemento                        | Descrizione                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Sistema di comunicazione        | RS-485 / 422 (portata del telecomando: max. 1 km)<br>TTL (per controllare la matrice)                                                          |
| Unità da comandare              | Max 255                                                                                                                                        |
| Velocità di trasmissione        | 2.400 - 38.400 bit/sec.                                                                                                                        |
| Compatibilità                   | PTZ / DVR / MATRICE / RICEVITORE                                                                                                               |
| Protocollo (PTZ)                | Samsung-T, Samsung-E, PELCO-D, PELCO-P, Panasonic, Vicon, AD, Honeywell, ELMO, BOSCH, GE                                                       |
| Protocollo (DVR)                | SVR, SRD, SRP                                                                                                                                  |
| Protocollo (MATRICE)            | SMX-25632                                                                                                                                      |
| Protocollo (UNITÀ DI RICEZIONE) | Samsung-T                                                                                                                                      |
| Supporto multilingue            | Inglese, spagnolo, francese, italiano, tedesco, turco, polacco, russo, portoghese, svedese, olandese, ceco, serbo, coreano, cinese, giapponese |
| Display LCD                     | LCD TFT da 5" + LCD touch                                                                                                                      |
| Porta USB                       | Backup / ripristino, aggiornamento software                                                                                                    |
| Porta video                     | Ingresso video BNC, uscita Loop-Through                                                                                                        |
| Joystick                        | Controllo PTZ (zoom rotazione triassiale)                                                                                                      |
| Jog/Shuttle                     | Controllo riproduzione DVD                                                                                                                     |
| Alimentazione                   | CC 12V, max 4 W                                                                                                                                |
| Temperatura di esercizio        | 0°C - 40°C                                                                                                                                     |
| Umidità di esercizio            | 10 - 70% (senza condensa)                                                                                                                      |
| Dimensioni                      | 459,1 (L) x 59,1 (H) x 177,9 (P) mm                                                                                                            |
| Peso                            | Circa 1,5 kg (adattatore escluso)                                                                                                              |

DOMANDE E RISPOSTE

| Problema                                                 | Azione                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Non si riesce a comunicare con il controller di sistema. | <ul style="list-style-type: none"><li>• Controllare che il cavo di comunicazione RS-485 sia collegato correttamente.</li><li>• Se la comunicazione è instabile a causa di un rumore sulla linea di comunicazione, collegare la porta G del dispositivo alla porta G di SPC-6000.</li></ul> |
|                                                          | <ul style="list-style-type: none"><li>• Controllare che l'indirizzo del controller di sistema sia specificato correttamente.</li><li>• Per specificare l'indirizzo, vedere "Impostazione del Controller" in "Impostazione Menu". (► pagina 35)</li></ul>                                   |
| La memoria USB non viene riconosciuta correttamente.     | <ul style="list-style-type: none"><li>• Controllare che la memoria USB funzioni correttamente.</li><li>• Utilizzare una sola memoria USB e riprovare.</li></ul>                                                                                                                            |



- Il display LCD del controller di sistema è un componente di consumo. Per acquistare il display, contattare il rivenditore o il centro di assistenza.

# GPL/LGPL SOFTWARE LICENSE

---

The software included in this product contains copyrighted software that is licensed under the GPL/LGPL. You may obtain the complete Corresponding Source code from us for a period of three years after our last shipment of this product by sending email to [help.cctv@samsung.com](mailto:help.cctv@samsung.com)

If you want to obtain the complete Corresponding Source code in the physical medium such as CD-ROM, the cost of physically performing source distribution might be charged.

- GPL S/W
    - Linux Kernel, QT, Busybox, Sysvinit, dosfstools, Uboot, Bash, initutils
  - LGPL S/W
    - gLibc
- 

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software-- to make sure the software is free for all its users.

This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price.

Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs ; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have.

You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps :

(1)copyright the software, and (2)offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

Version 2, June 1991 Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin S

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License.

The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law : that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License ; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty ; and give any other recipients of the Program a copy of this License along with the program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions :

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception:if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you ; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program. In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following :

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange ; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange ; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works.

These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all.

For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances. It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system ; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation ; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING

RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the program's name and an idea of what it does.

Copyright (C)yyyy name of author

This program is free software ; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation ; either version 2 of the License, or (at your option)any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY ; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program ; if not, write to the Free Software Foundation, Inc.,51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

Also add information on how to contact you by electronic and paper mail. If the program is interactive, make it output a short notice like this when it starts in an interactive mode :

Gnomovision version 69,

Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO

WARRANTY ; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions ; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c' ; they could even be mouse-clicks or menu items-- whatever suits your program.

You should also get your employer (if you work as a programmer)or your school, if any, to sign a "copyright disclaimer" for the program,if necessary. Here is a sample ; alter the names:

Yoyodyne, Inc.,hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989 Ty Coon, President of Vice This General Public License does not permit incorporating your program into proprietary programs.

If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The GNU General Public License is a free, copyleft

license for software and other kinds of works. The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users.

We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

### 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are inalienable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- The work must carry prominent notices stating that you modified it, and giving a relevant date.
- The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, or in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered

by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

- c) Convey individual copies of the object code with a copy of the written offer to provide the corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this

License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you

grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license

- a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or
- b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

## 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

## 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

## 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

# END OF TERMS AND CONDITIONS

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301

USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages—typically libraries—of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed

on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each license is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code

for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library. b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change. c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License. d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful. (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.) These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete

corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that

(1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE, EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found. one line to give the library's name and an idea of what it does.

Copyright (C) year name of author

This library is free software; you can redistribute it and/ or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library 'Frob' (a library for tweaking knobs) written by James Random Hacker.

signature of Ty Coon, 1 April 1990 Ty Coon, President of Vice.





## **RETE DI VENDITA**

---

### **SAMSUNG TECHWIN CO., LTD.**

Samsungtechwin R&D Center, 701, Sampyeong-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea, 463-400  
TEL : +82-70-7147-8740~60 FAX : +82-31-8018-3745

### **SAMSUNG TECHWIN AMERICA Inc.**

100 Challenger Rd. Suite 700 Ridgefield Park, NJ 07660  
Toll Free : +1-877-213-1222 Direct : +1-201-325-6920  
Fax : +1-201-373-0124  
[www.samsungcctvusa.com](http://www.samsungcctvusa.com)

### **SAMSUNG TECHWIN EUROPE LTD.**

Samsung House, 1000 Hillswood Drive, Hillswood Business  
Park Chertsey, Surrey, UNITED KINGDOM KT16 0PS  
TEL : +44-1932-45-5300 FAX : +44-1932-45-5325

---

[www.samsungtechwin.com](http://www.samsungtechwin.com)  
[www.samsungsecurity.com](http://www.samsungsecurity.com)